Digital Tuner 70FT950/00S

Service
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Service

Service Manual

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Safety regulations require that the set be restored to its orginal condition and that parts which are identical with those specified be used.

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GB 4822 725 23017

PHILIPS

CS 33 124

SERVICE MODE

1. Init after first power on

The software will check the eeprom each time the set is powered on. If an uninitialised eeprom is detected an eeprom init routine will be started.
Note: This routine will also be executed if an extra eeprom is added to add more DSR presets.
The following eeproms are supported: X24C16, X24C08 + Optinal X24C04 (2x)

During eeprom init the display will show "EEPROM"

Set init:

Band	DSR
Preset	Preset
Station	Station 1
Mute	Off
Levels	All at 0 dB
DSR Preset 1	118 MHz (CABLE 1)
DSR Preset 2	132 MHz (CABLE 2)
DSR Preset 3	480 MHz (No Name)
DSR Preset 4 -> 9	FREE
AM/FM Preset 1	93.0 MHz/Stereo/Antenna
AM/FM Preset 2	89.2 MHz/Stereo/Antenna
AM/FM Preset 3 -> 59	FREE
All names	blanked

Manual init:
- Press Memory O/C
- Switch set on
- Release Memory O/C
- Press Mono/Stereo within 1sec
- The display will show "EEPROM" during eeprom init

2. Test functions

a. Press Name, switch set on
The name and version number of the set will be shown on the display.
e.g. "FT 950-05" = FT 950, Software Version 05
"FT 950-A" = FT 950, Released Software Version A

Press FD, switch set on
All segments of the display will be switched on.

SPECIFICATION

Wavebands
- MW : 522 - 1611 kHz / 9 kHz steps on search mode, fast, direct, manual
- FM : 87.5 - 108.0 MHz / 50 kHz steps on manual tuning / 50 kHz steps on search mode, direct, fast
- DSR : 50.0 - 855.0 MHz / 1 MHz steps on manual tuning / 1 MHz steps direct

Antenna inputs
- Antenna 75 Ω coaxial : FM
- Cable 75 Ω coaxial : FM + DSR
- AM-LOOP : MW

AF-output : 2 Cinch sockets
- Output impedance : 540 Ω
- Terminating resistance : ≥10 kΩ

Digital output (earth-free) : 1 Cinch socket
- Output level : 0.5 Vpp
- Terminating resistance : 75 Ω

Remote control : RC 5
- Bus connection : EEL-bus

Memory
- 59 memory locations Intermix for MW / FM
- 1 main memory for MW
- 1 main memory for FM
- 3 presets for 16 DSR-stations each

Storage possibilities
- MW / FM : Reception frequency, Station name, AF-level for each memory location, CABLE / ANTENNA (only FM), Mono / Stereo (only FM)
- DSR : Reception frequency, Preset name, Music / Speech level for each station

Type of memory : EEPROM (without battery)

Dimensions
- W / H / D without feet and plugs : 435 x 90 x 305 mm
- W / H / D with feet and plugs : 435 x 116 x 355 mm

Weight : approx. 6 kg

Power supply : 220 - 230 V ± 10 %

Power consumption : max. 20 W

Technical Data: AM

Sensitivity : 2 µV
(S+N / S = 6 dB; m = 30 %; f_e = 999 kHz)

Image selection : ≥ 40 dB
(S+N / S = 6 dB; f_e = 999 kHz)

Intermediate frequency : 450 kHz

IF-bandwidth (- 3 dB) : 4.7 kHz

IF-stability (f_e = 603 kHz) : ≥ 47 dB

Selectivity (f_e = 999 kHz ± 9 kHz) : ≥ 28 dB

Signal-to-noise ratio
- 1 mV RF-level : 50 dB
- 20 mV RF-level : 53 dB

(f_{AF} = 1 kHz; m = 30 %; f_e = 1 kHz)

Output voltage : 400 mV
(f_{AF} = 1 kHz; m = 30 %; f_e = 999 kHz; RF-level = 1 mV)

Level control : + 6 . . . - 15 dB (7 steps / 3 dB)

Technical Data: FM

Sensitivity Mono (26 dB)
- ANTENNA : 1 µV
- CABLE : 3 µV

(f_e = 98 MHz; f_{NF} = 1 kHz; deviation = 40 kHz)

Sensitivity Stereo (46 dB)
- ANTENNA : 35 µV
- CABLE : 100 µV

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz + 7.5 kHz pilot deviation)

Limiting sensitivity
- ANTENNA - 1 dB : 1.0 µV
- ANTENNA - 3 dB : 0.8 µV
- CABLE - 1 dB : 3.0 µV
- CABLE - 3 dB : 2.5 µV

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz)

Pilot and subcarrier attenuation
- 19 kHz : ≥ 60 dB
- 38 kHz : ≥ 80 dB

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz + 7.5 kHz pilot deviation; RF-level = 1 mV)

Crosstalk attenuation
- 250 Hz : ≥ 40 dB
- 1 kHz : ≥ 40 dB
- 10 kHz : ≥ 30 dB

(f_e = 98 MHz; deviation = 40 kHz + 7.5 kHz pilot deviation; RF-level = 1 mV)

Distortion factor
- Mono : ≤ 0.2 %
- Stereo : ≤ 0.5 %

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz + 7.5 kHz pilot deviation; RF-level = 1 mV)

Dynamic selectivity
- Mono : ≥ 60 dB
- Stereo : ≥ 60 dB

(f_e = 98 MHz ± 300 kHz; f_{AF} = 1 kHz; deviation = 40 kHz; S / N = 30 dB)

Capture Ratio
- 40 kHz deviation : 1.5 dB
- 75 kHz deviation : 2.0 dB

Image frequency stability : ≥ 90 dB
(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz; RF-level = 1 mV)

IF-suppression : ≥ 110 dB
(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz; RF-level = 1 mV)

AM-suppresion : ≥ 50 dB
(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 22.5 kHz; m = 30 %; RF-level = 1 mV)

Intermediate frequency : 10.7 MHz

IF-bandwidth : 120 - 160 kHz

Signal-to-noise ratio (unweighted)

	effective	peak
Mono	71 dB	68 dB
Stereo	68 dB	64 dB

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz + 7,5 kHz pilot deviation; RF-level = 1 mV)

Signal-to-noise ratio (weighted)

	A effective	DIN 45405	CCIR468 peak
Mono	74 dB	66 dB	68 dB
Stereo	70 dB	61 dB	64 dB

(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz + 7.5 kHz pilot deviation; RF-level = 1 mV)

Transmission range (-3 dB) : ≤ 10 Hz - ≥ 15 kHz

Stereo switching threshold

ANTENNA	Stereo on	: 20 µV
	Stereo off	: 15 µV
CABLE	Stereo on	: 65 µV
	Stereo off	: 48 µV

Muting threshold

ANTENNA	Muting on	: 7 µV
	Muting off	: 10 µV
CABLE	Muting on	: 22 µV
	Muting off	: 32 µV

Exact tuning / Tunoscope : ± 25 kHz / ± 75 kHz

Output voltage
(f_e = 98 MHz; f_{AF} = 1 kHz; deviation = 40 kHz; RF-level = 1 mV)

Level control : + 6 . . . - 15 dB (7 steps / 3 dB)

Technical Data: DSR

Capture range Costas loop : ± 750 kHz

Hold range (AFC) : ± 3 MHz

Input voltage C / N ≥ 10 dB : 48 dBµV - 94 dBµV

Bit error rate (BER) C / N ≥ 10 dB : < 10^{-3}

Sampling frequency : 32 kHz

D / A conversion : Bit stream (1 Bit)

Speech / Music control : 0 . . . - 21 dB (7 steps / 3 dB)

Output voltage (0 dB level control) : 2 V ± 1.0 dB

Level difference : ≤ 0.5 dB

Frequency response
- 20 Hz - 14.5 kHz : ± 0.2 dB
- 14.5 kHz - 15.0 kHz : - 1.0 dB

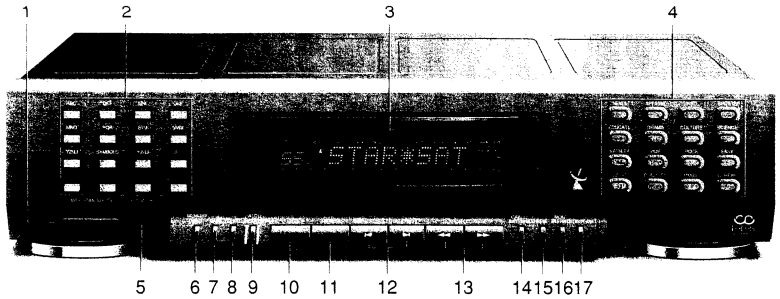
Signal-to-noise ratio
- Weighted (DIN A) : ≥ 92 dB
- Unweighted : ≥ 90 dB

Dynamic range : ≥ 87 dB

Distortion factor
- 20 Hz - 15 kHz : ≤ 0,010 % (- 80 dB)
- 1 kHz : ≤ 0.006 % (- 84 dB)

Stereo channel separation : ≥ 90 dB

CONNECTIONS AND CONTROLS



1 **POWER STANDBY/OFF** – for switching the tuner on and off

2 **Digit keys**
– for selecting preset stations
– for entering data when programming station names, programming or changing satellite presets and when using the direct tuning function

3 **Display**

4 **PROGRAMME TYPE** keys – for selecting a programme type

5 **IR SENSOR** – receiving signals from the remote control

6 **MEMORY O**(pen)/**C**(lose) – for opening and closing the memory when storing satellite presets and preferred stations

7 **NAME** – for programming station names and satellite preset names

8 **LEVEL** – for setting and reviewing audio input levels

9 **AUTOMEMORY** – for automatic programming of preset stations and satellite presets

10 **DSR** – for selecting **DSR** (**D**igital **S**atellite **R**adio) mode.

11 **FM/MW** – for selecting **FM** or **MW** waveband

12 ⏮ **PRESET/STATION** ⏭ – preset up/down or station up/down

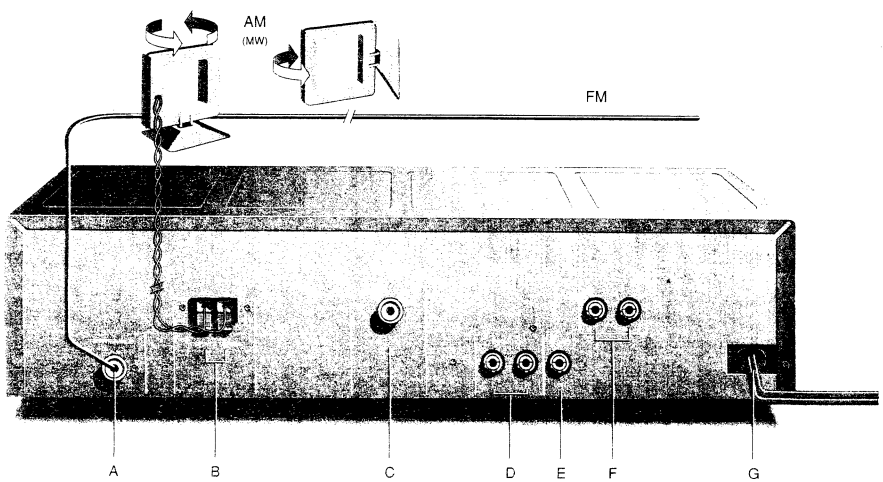
13 ◂◂ **SEARCH/CURSOR** ▸▸
– for automatic tuning.
– for moving the cursor.
– for setting audio input levels (**LEVEL**).

14 **CABLE/ANTENNA** – for selecting **CABLE ANTENNA** (**C**), **FM ANTENNA** (**A**) or **LOOP ANTENNA** (**B**).
In **DSR** mode **CABLE ANTENNA** (**C**) will be selected automatically.

15 **F**(requency) **D**(irect) – for direct tuning to the station frequency

16 **MONO/STEREO A/B** – for selecting mono (**FM**), mono **A** and **B** (**DSR**) or stereo (**FM/DSR**) reception

17 **DISPLAY** – for selecting the information to be shown on the display



A **FM ANTENNA 75 Ω**
The FM ANTENNA socket is used for connection to the Community or Cable Antenna System or to a roof-mounted FM aerial with an impedance of 75 ohms. If none of these are available, you may use the wire supplied for nearby stations (reception could be poor).

B **LOOP ANTENNA MW**
For MW reception connect the supplied wires to both MW LOOP antenna terminals and position the antenna for best reception.
Note: Do not place the MW loop antenna on the unit, as this unit employs a computing device which could cause interference.

C **CABLE ANTENNA 75 Ω**
Connect a coaxial cable from the switchbox at the cable delivery socket to this DSR input socket.

D **ANALOG OUT**
Output sockets for connecting your tuner to an amplifier.
Connect the ANALOG OUT sockets to the TUNER input sockets of your amplifier.

E **DIGITAL DSR**
For connection to an amplifier which is equipped with a D/A converter or a digital recording device. This output supplies a digital signal and can therefore only be connected to an input which is suitable for this signal. Use here a lead with one cinch plug on either end.

F **SYSTEM CONTROL**
ESI BUS (Enhanced System Intelligence)
Remote-control sockets for connecting up the equipment when you are incorporating the tuner in a HiFi system with ESI BUS connection (e.g. Philips 900 series).
Connect the ESI socket to the ESI socket of the external equipment that uses the ESI remote control system.

G **Mains lead**

SERVICING HINTS

1. ESD

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential. See Service Information A86 - 1000 for this.

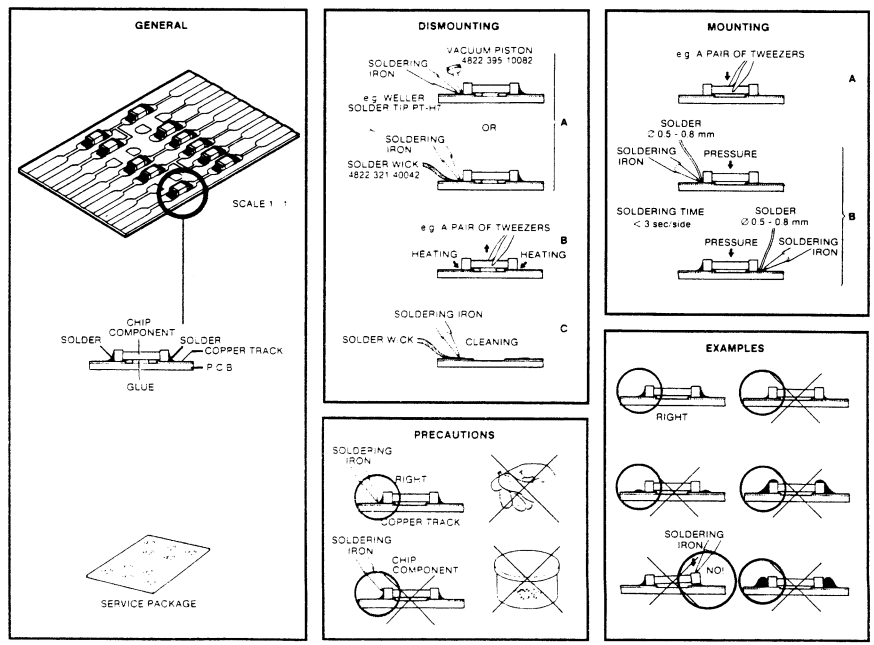
2. Warning

If the set is connected to mains voltage, there is a risk of shock-hazard voltages after the set is decased.

3. Warning

It is recommended that the tuner is re-initialized after replacement of the signal chassis board. Follow the instructions given in the section "Service Mode".

4. HINTS OF CHIP COMPONENTS



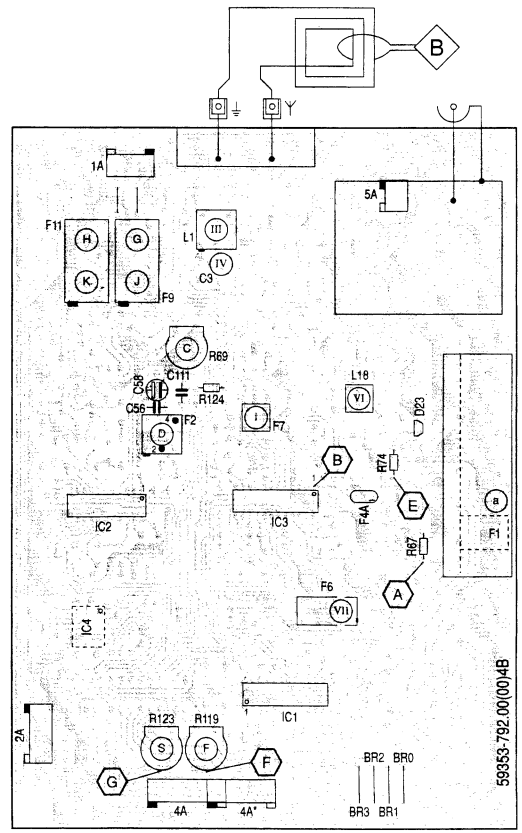
ALIGNMENT AND ALIGNMENT LAYOUT

All adjustment controls on the signal chassis board are adjusted during production and must not be re-adjusted in the case of repairs.

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	REMARKS DETUNE	ADJUST	OSCILLOSCOPE OR A.C. METER	D.C. METER INDICATOR
FM-IF							
FM	98 MHz U_{RF} = approx. 100µV/75Ω fmod = 1kHz Δf = ±200kHz	Aerial socket	Display 98.00 MHz		(a) F 1	(B) [1] max.~ + sym.	
FM-DEMODULATOR							
FM	98 MHz U_{RF} = 1mV/75Ω Δf = ±40kHz	Aerial socket	Display 98.00 MHz		(i) F 7	AF output min. distortion (typ. 0.12%, max. 0.2%)	
FM-FIELD STRENGTH INDICATION							
FM	98 MHz U_{RF} = 1mV/75Ω fmod = 1kHz	Aerial socket	Display 98.00 MHz		(F) R 119		(F) 1.5V + 0.05V
FM-SEARCH STOP							
FM	98 MHz U_{RF} = 15µV/75Ω fmod = 1kHz	Aerial socket	Display 98.00 MHz		(S) R 123		(G) 0.7V + 0.05V
FM-STEREO DECODER CROSSTALK							
FM STEREO	106 MHz fmod = 1kHz left	Aerial socket	Display 106.00 MHz		(C) R 69	[2] AF output right min. ~	
	106 MHz fmod = 1kHz right					[2] AF output left min. ~	
ADJACENT CHANNEL FILTER							
FM STEREO	114 kHz approx. 100mV to the input of F 2 (Pin 2)	(D)			(D) F 2	to the output of F 2 (Pin 4) min. ~	
FM-PILOT-FILTERS							
FM STEREO	fmod = 38 kHz approx. 100mV	Aerial socket			(J) F 9 (K) F 11	AF output min. ~ 38 kHz	
	fmod = 19 kHz approx. 100mV				(G) F 9 (H) F 11	AF output min. ~ 19 kHz	

Repeat -Herhalen -Répéter -Wiederholen -Ricominciare -Repetera -Gentage -Gjentagelse -Toista

SK... WAVE RANGE SWITCH	SIGNAL	TO	DISPLAY TUNE IN	REMARKS DETUNE	ADJUST	OSCILLOSCOPE OR A.C. METER	D.C. METER INDICATOR
MW-RF (Oscillator)							
MW			Display 531 kHz		(VI) L 18		(E) 1.1V =
MW-RF-IF							
MW	1449 kHz fmod = 1kHz m = 30 %	(B)	Display 1449 kHz		(IV) C 3 (VII) F 6	AF output max. ~	
	558 kHz fmod = 1kHz m = 30 %		Display 558 kHz		(III) L 1		



ELUCIDATIONS

[1] The frontend is a completely preadjusted module. Only the IF filter must be adjusted to the IF amplifier.
[2] Adjust the left and the right channel to the same minimum level.

⬡ Measuring point

◯ Trimming element

Ceramic resonators

When replacing one of the ceramic resonators, take care that the colour codes of all three resonators are the same.

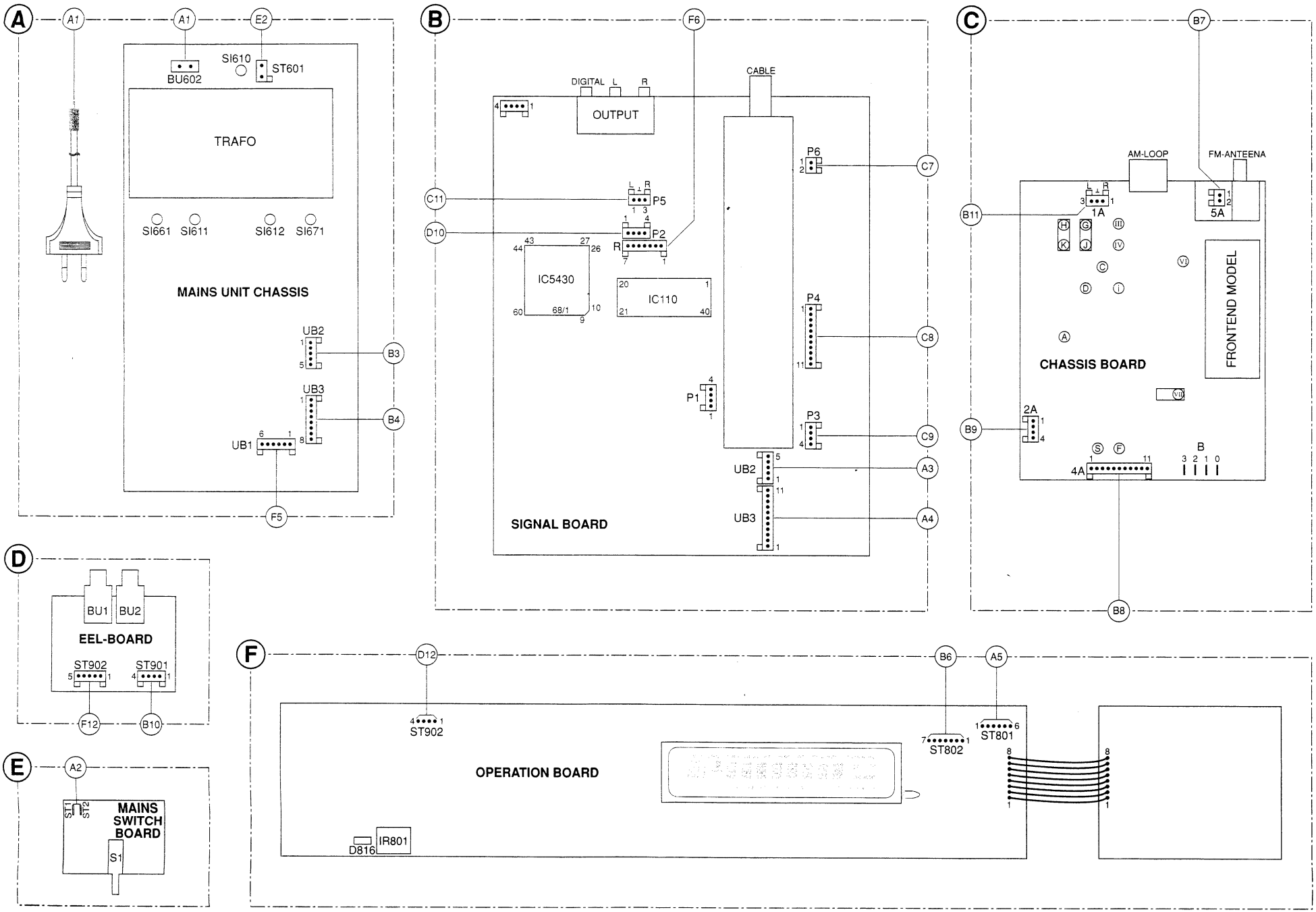
FM IF offset

The ceramic resonators have different intermediate frequencies as a result of tolerances. Dependent on the IF, a jumper has to be closed or a jumper has to be opened. B0 - B3 (see table). The resonators have been provided with a colour code.

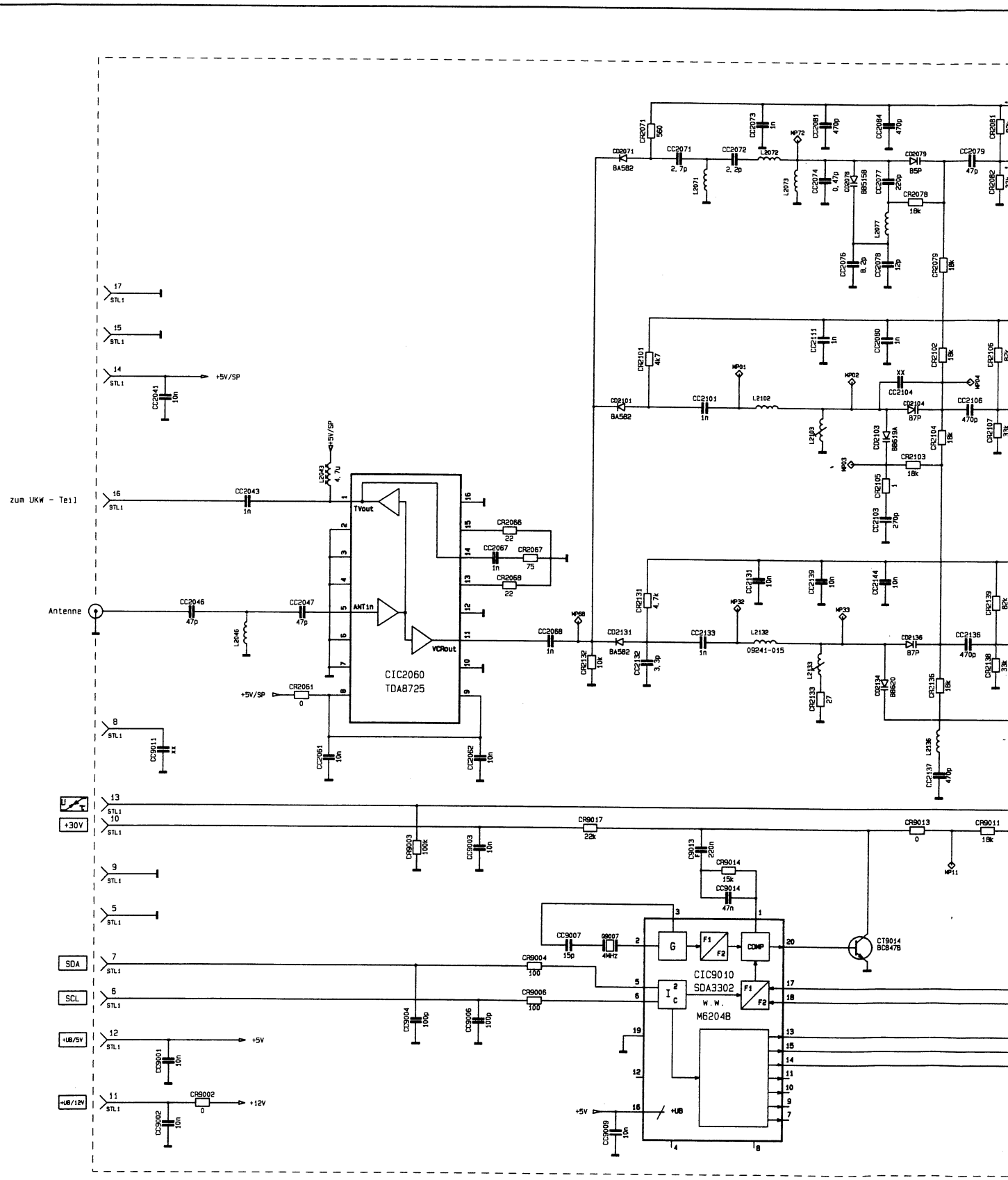
	Jumper				
IF (MHz)	B 3	B 2	B 1	B 0	Filter colour
10.6500	0	1	0	0	Black
10.6750	0	1	1	0	Blue
10.7000	1	0	0	0	Red
10.7250	1	0	1	0	Orange
10.7500	1	1	0	0	White

0 = jumper open 1 = jumper closed

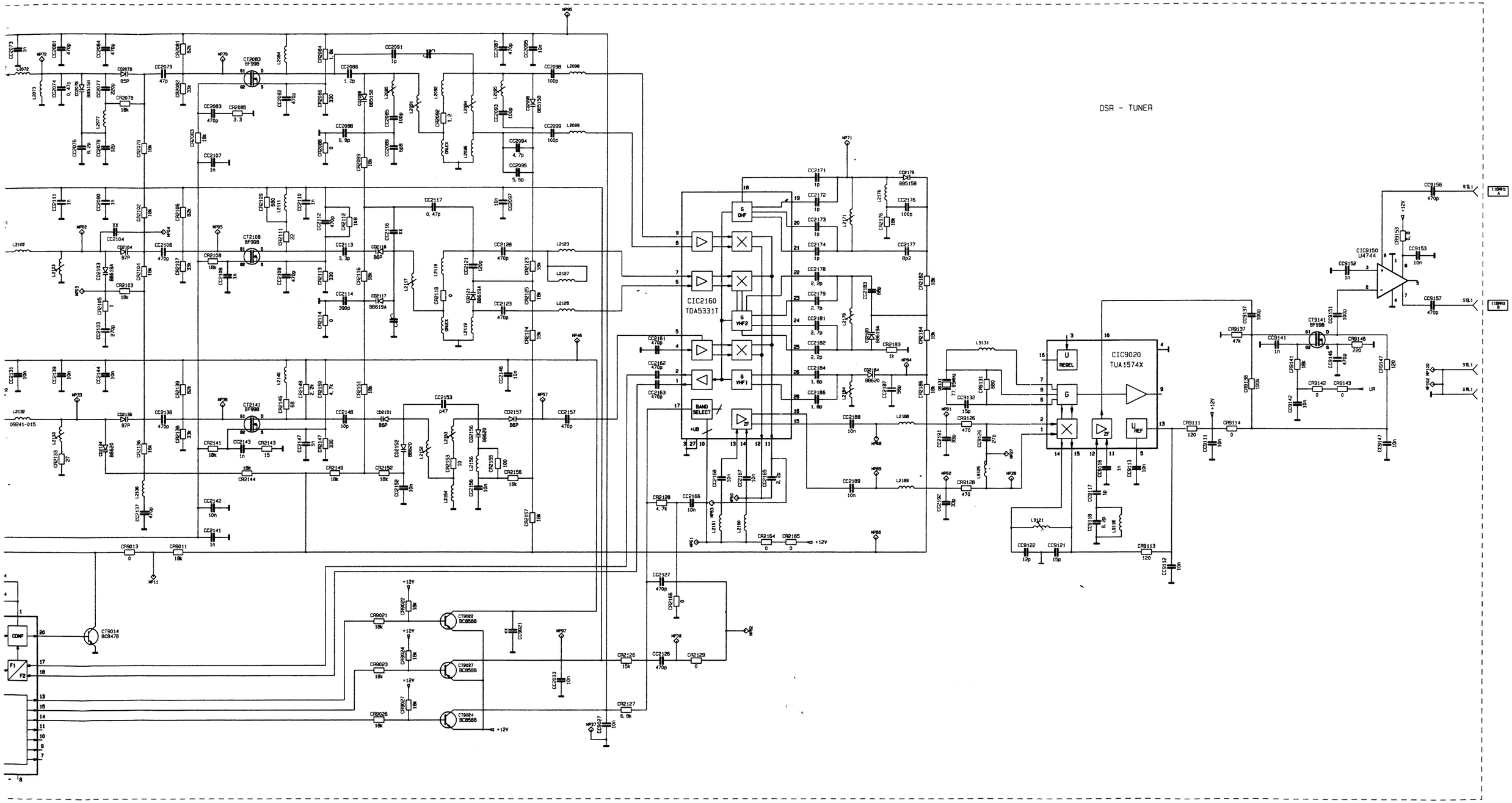
WIRING DIAGRAM



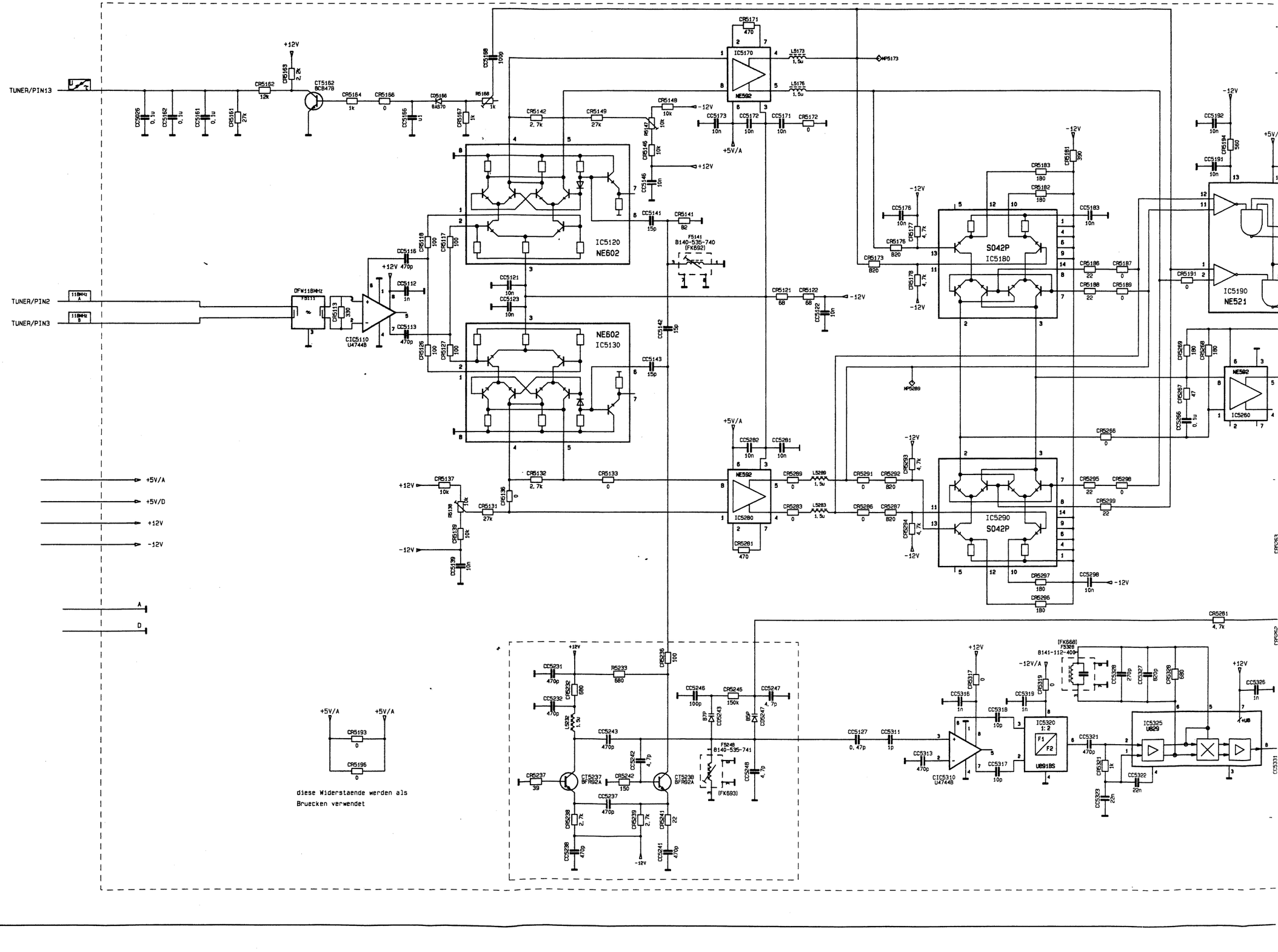
CIRCUIT DIAGRAM: DSR-TUNER

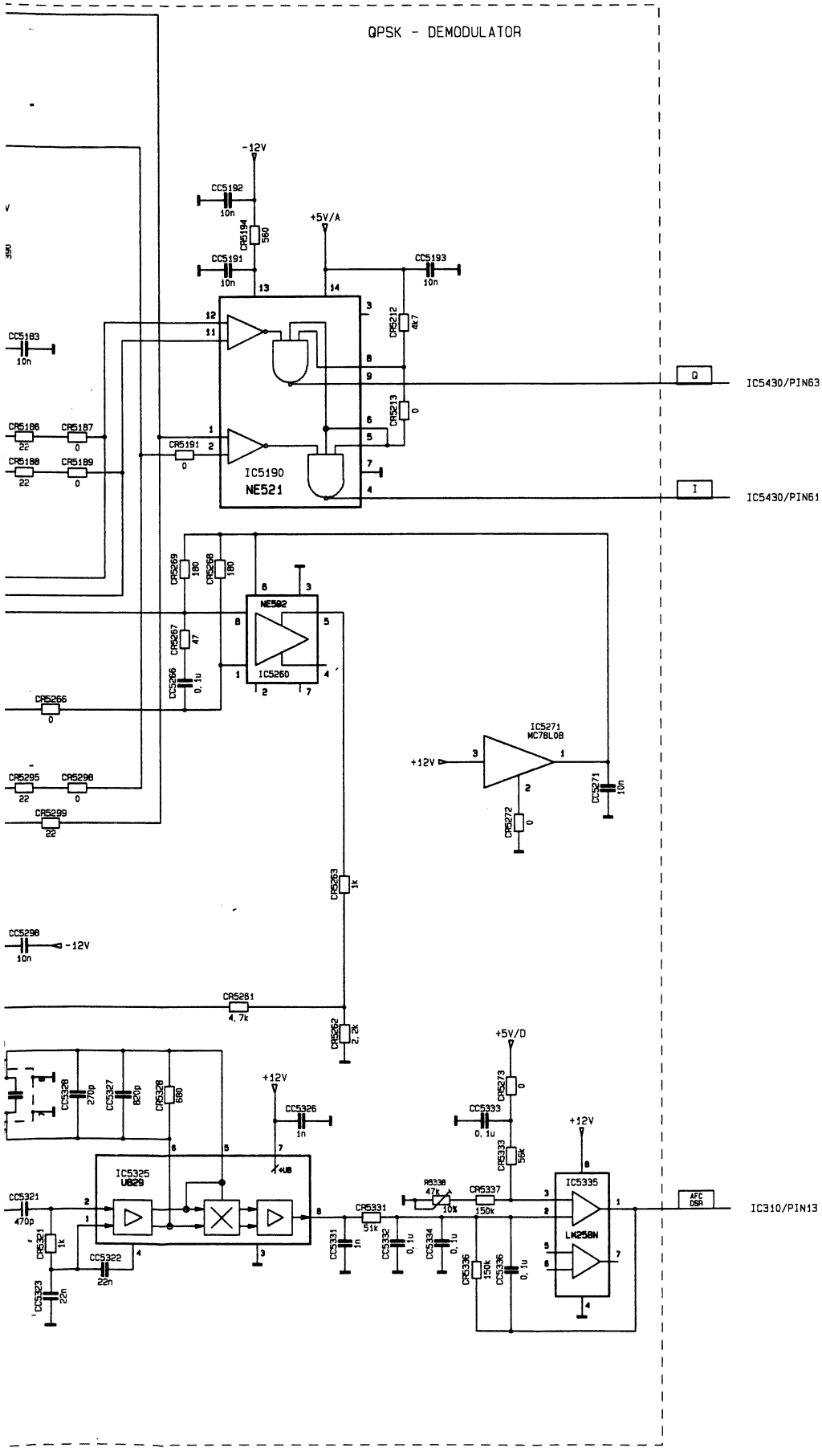


DSR - TUNER

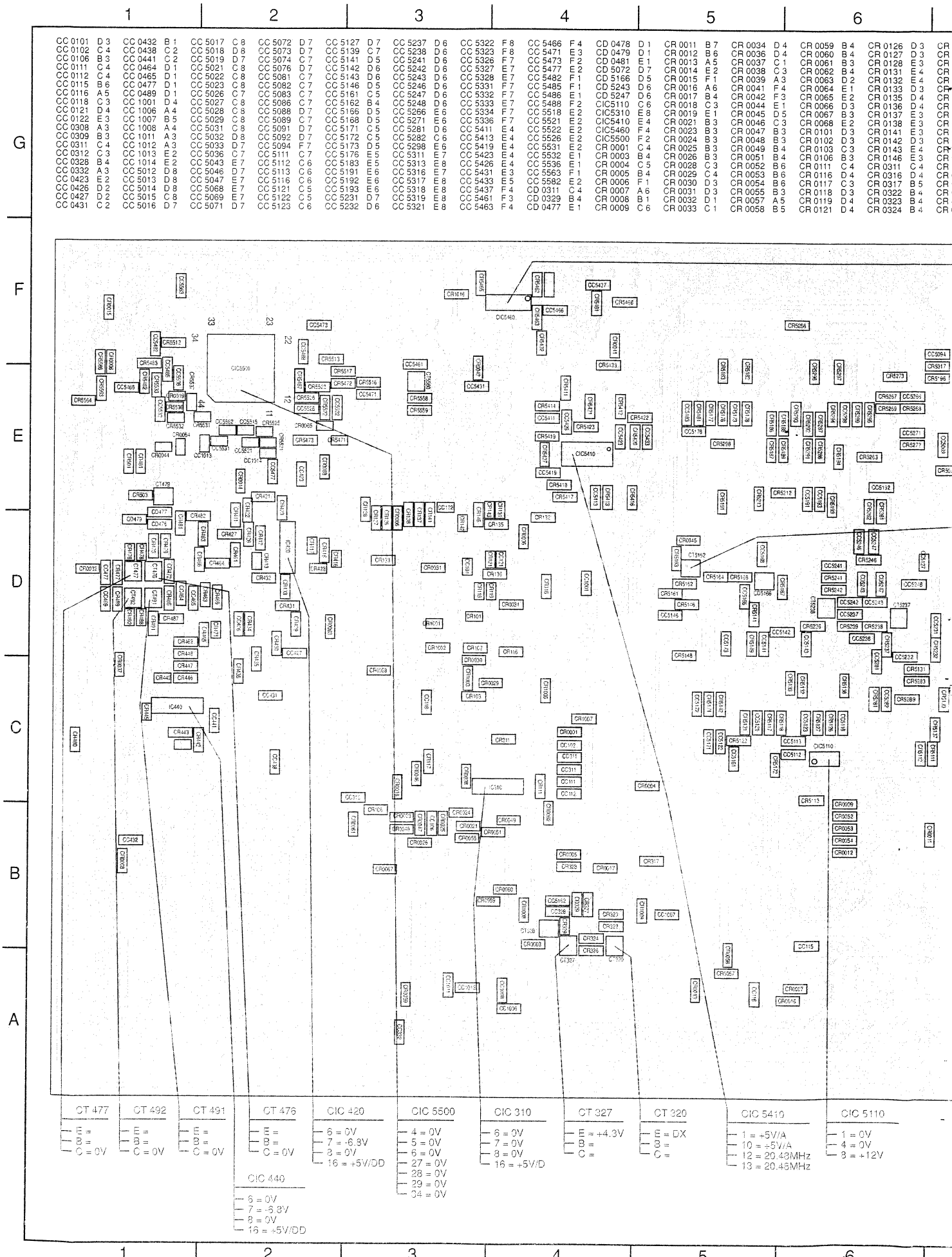

CIC2160
TDA5331T
CIC9020
TUA1574X
CT2083 BF998
CT2108 BF998
CT2141 BF998
CT9141 BF998
CT9014 BC848
CT9022 BC858B
CT9023 BC858B
CT9024 BC858B
CIC9150 U4744
+12V
COMP
F1
F2
BAND SELECT
+UB
G DVB
G VHF2
G VHF1
ZF
REGEL
G
U REGEL
U REF
77.85MHz
UR

CIRCUIT DIAGRAM: QPSK-DEMODULATOR




QPSK - DEMODULATOR
-12V
CC5192
10n
CR5194
560
+5V/A
CC5191
10n
CC5193
10n
CC5183
10n
CR5212
4K7
CR5213
0
CR5186
22
CR5187
0
CR5188
22
CR5189
0
CR5191
0
IC5190
NE521
Q
IC5430/PIN63
I
IC5430/PIN61
CR5269
180
CR5268
180
NE592
CR5267
47
CC5266
0,1u
IC5260
CR5266
0
IC5271
MC78L08
+12V
CC5271
10n
CR5272
0
CR5295
22
CR5298
0
CR5299
22
CR5263
1k
CC5298
10n
-12V
CR5261
4,7k
CR5262
2,2k
+5V/D
CR5273
0
CC5333
0,1u
CR5333
56k
+12V
CC5326
1n
CC5328
680
CC5327
820p
CC5326
270p
IC5325
U829
+UB
CC5321
470p
CR5321
1k
CC5322
22n
CC5323
22n
R5338
47k
10%
CR5337
150k
IC5335
LM258N
AFC
DSR
IC310/PIN13
CR5331
51k
CC5331
1n
CC5332
0,1u
CC5334
0,1u
CR5336
150k
CC5336
0,1u

SIGNAL-CHASSIS PCB



	6	7	8	9	10	11	12	13	14	15	16	17	18
0034	D 4	CR 0059 B 4	CR 0126 D 3	CR 0326 B 4	CR 0429 D 2	CR 0465 D 2	CR 0493 C 1	CR 5019 C 7	CR 5091 D 7	CR 5142 C 5	CR 5187 E 5	CR 5266 F 6	CR 5317 F 7	CR 5427 E 4	CR 5523 E 2	CT 0492 D 1	C101 D 15	C5416 E 15	D501 C 18	IC110 C 15	IC5323 E 11	L5082 C 12	P4 A 15	T3 B 13
0035	C 4	CR 0060 B 4	CR 0127 D 3	CR 0327 B 4	CR 0430 D 2	CR 0466 D 2	CR 0494 C 1	CR 5022 C 8	CR 5093 C 7	CR 5146 D 5	CR 5188 E 6	CR 5267 E 6	CR 5319 E 7	CR 5432 F 4	CR 5525 E 2	CT 5012 D 8	C107 B 13	C5421 E 16	D502 C 18	IC115 A 13	IC5325 F 11	L5088 D 12	P5 D 17	T4 B 14
0036	C 1	CR 0061 B 3	CR 0128 E 3	CR 0328 B 4	CR 0431 D 2	CR 0469 D 2	CR 0496 C 1	CR 5026 C 7	CR 5096 C 7	CR 5148 D 5	CR 5189 E 6	CR 5268 E 6	CR 5321 F 8	CR 5433 F 4	CR 5526 E 2	CT 5023 C 8	C329 A 13	C5422 E 15	DSR1 B 15	IC116 A 14	IC5335 F 12	L5088B D 12	P6 A 17	T5 B 14
0037	C 3	CR 0062 B 4	CR 0131 E 4	CR 0329 B 4	CR 0432 D 2	CR 0471 D 2	CR 0497 C 1	CR 5028 C 8	CR 5097 C 7	CR 5149 D 5	CR 5191 E 5	CR 5269 E 6	CR 5328 E 7	CR 5461 F 4	CR 5532 E 1	CT 5062 D 7	C422 A 16	C5432 F 15	DSR2 B 16	IC120 E 16	IC5420 E 16	L5089 D 12	Q MP E 13	T6 B 14
0038	A 3	CR 0063 D 2	CR 0132 E 4	CR 0331 A 3	CR 0433 D 2	CR 0472 D 1	CR 0498 C 1	CR 5046 E 7	CR 5111 C 7	CR 5161 D 5	CR 5193 E 6	CR 5272 E 6	CR 5331 F 7	CR 5462 F 4	CR 5533 E 1	CT 5066 E 7	C430 D 17	C5434 E 15	DSR3 B 16	IC130 C 15	IC5560 F 18	L5089B D 12	Q111 C 15	T7 B 14
0041	F 4	CR 0064 B 1	CR 0133 E 3	CR 0332 A 3	CR 0434 D 2	CR 0473 D 1	CR 0499 C 1	CR 5047 D 8	CR 5112 C 7	CR 5162 D 5	CR 5194 E 6	CR 5273 E 6	CR 5333 F 7	CR 5463 F 4	CR 5534 E 1	CT 5083 C 7	C433 D 17	C5462 F 15	DSR4 B 16	IC330 A 16	KH1 A 10	L5173 D 14	Q5047 E 12	T8 B 14
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0044	E 1	CR 0066 D 3	CR 0136 D 4	CR 0334 A 3	CR 0436 D 2	CR 0477 D 1	CR 0503 E 1	CR 5049 D 7	CR 5117 C 5	CR 5164 D 5	CR 5212 E 6	CR 5283 C 6	CR 5337 F 7	CR 5466 F 4	CR 5537 E 1	CT 5237 D 6	C436 D 17	C5476 E 17	DSR6 B 16	IC460 D 17	L5012 D 12	L5232 D 13	R D 16	T10 B 15
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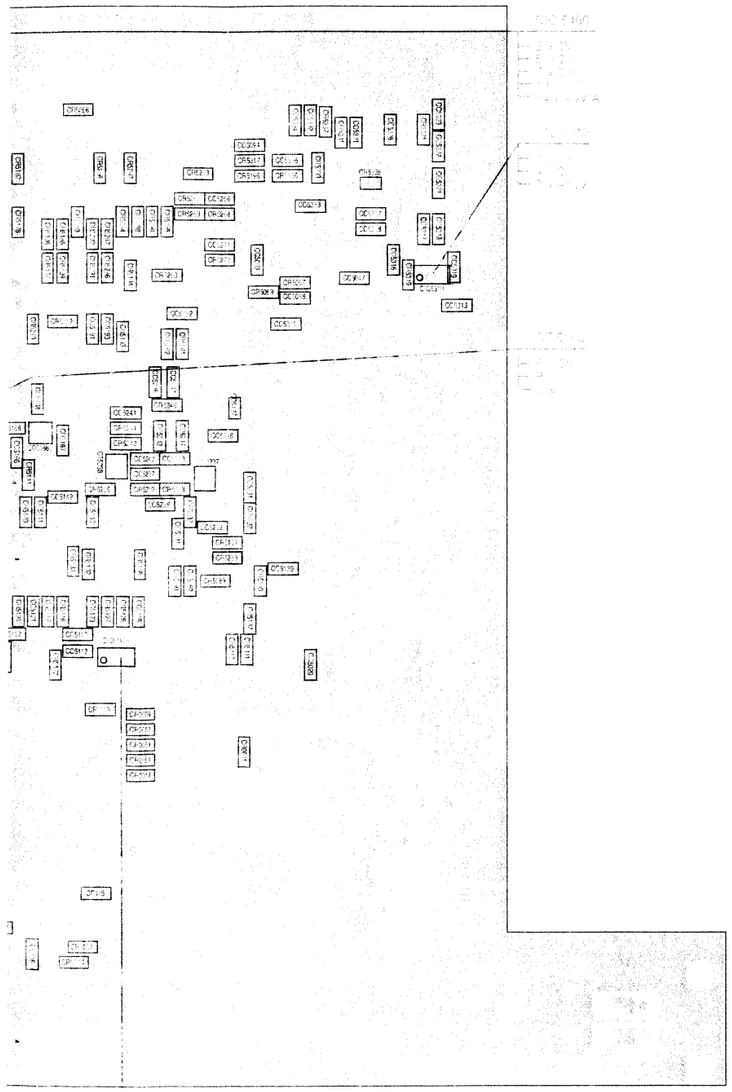

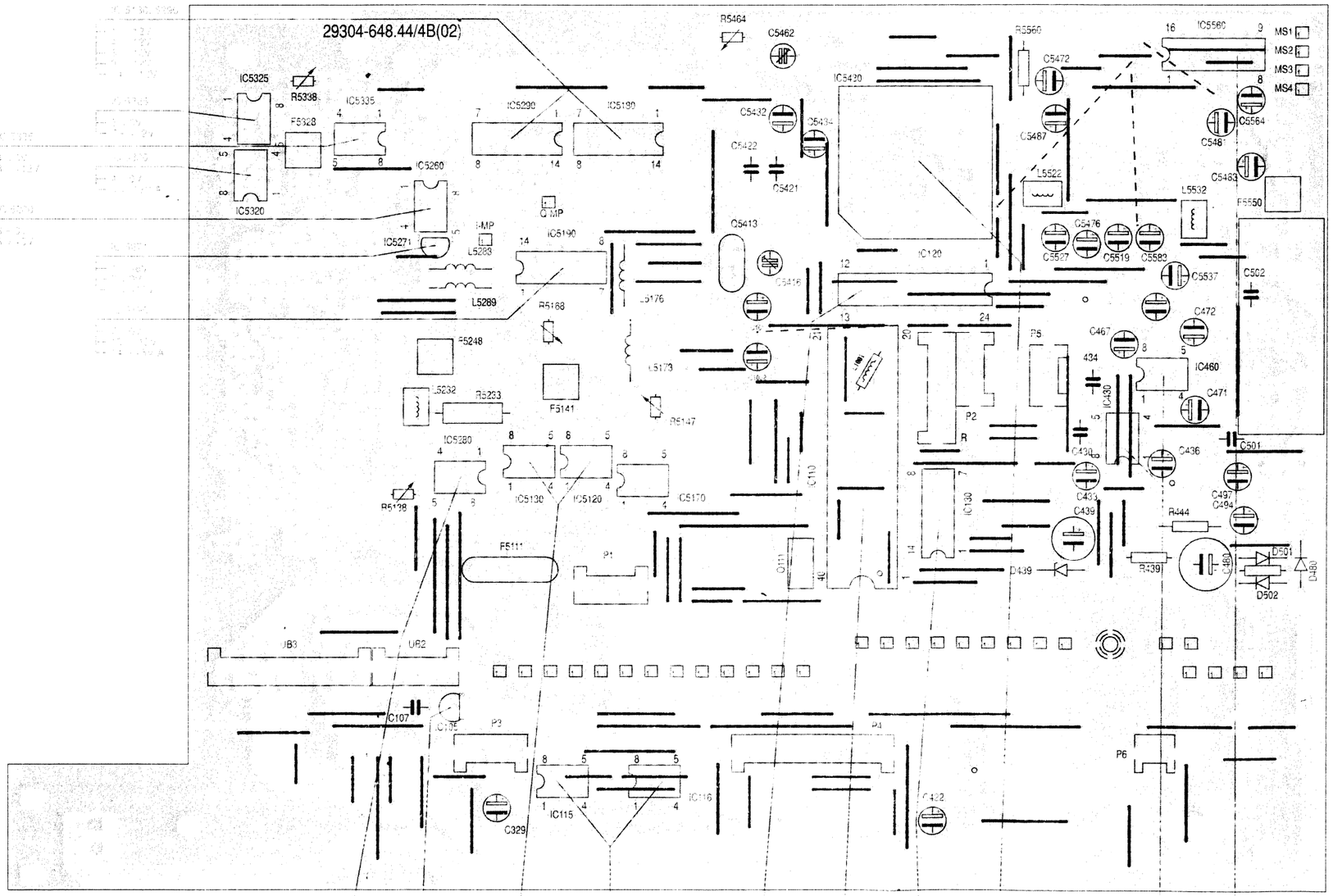

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CS 33 132

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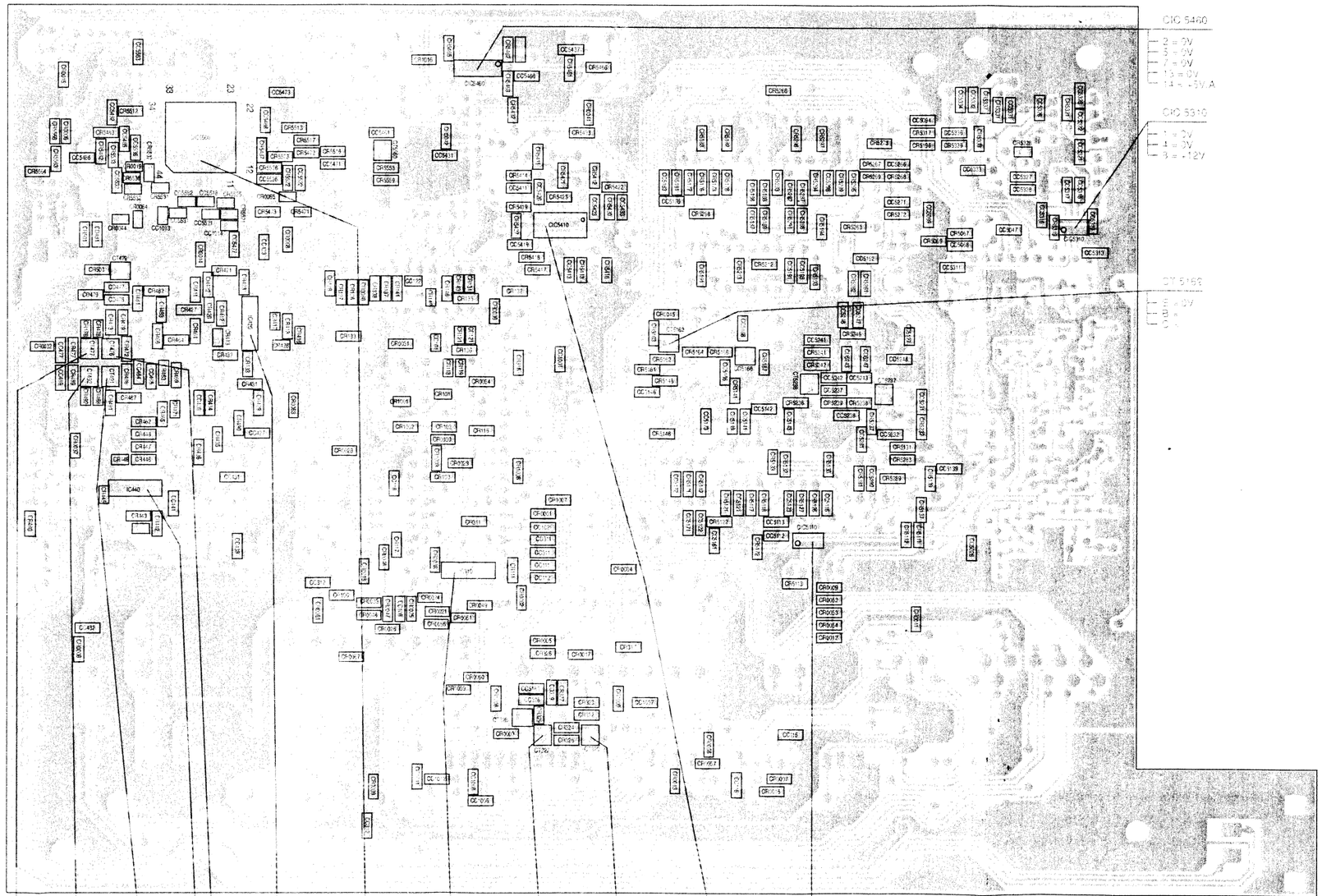

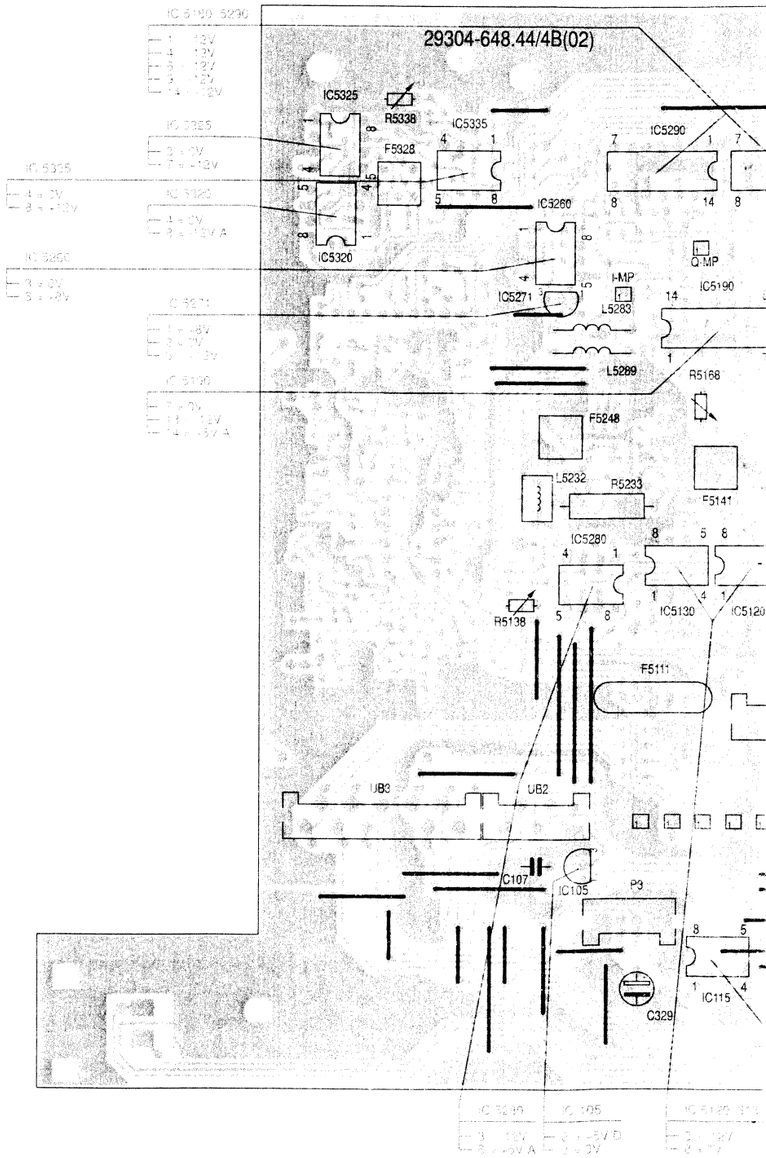

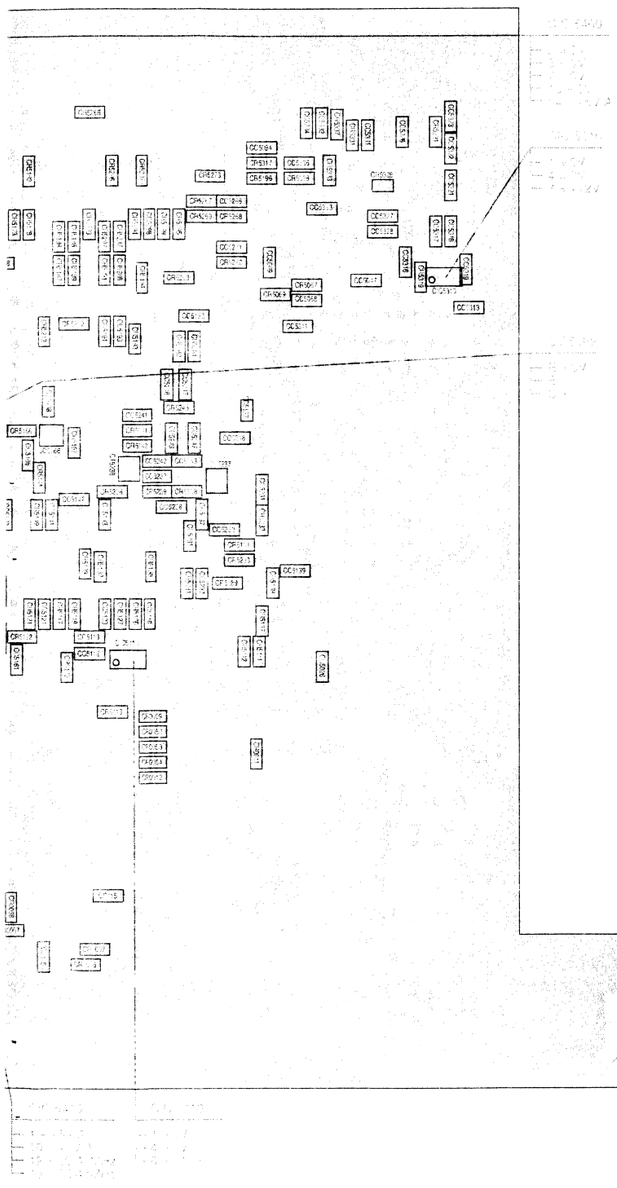

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	CR0049 B4	CR0103 C3	CR0143 E4	CR0417 D2	CR0446 C1	CR0482 E2	CR1007 C4	CR5069 E7	CR5127 C6	CR5173 E5	CR5238 D6	CR5292 E6	CR5416 E5	CR5483 F1	CR5566 F1	IC 0420 D2	C480 C18	C5527 E17	DSR14 B18	IC5130 C13	L5021 C11	MS1 F18	R5147 D14	T15 B18
	CR0051 B4	CR0106 B3	CR0146 E3	CR0418 D2	CR0447 C1	CR0483 D2	CR1008 B4	CR5071 D7	CR5131 C6	CR5176 E5	CR5239 D6	CR5293 E6	CR5417 E4	CR5487 E2	CT 0320 B4	IC 0440 C1	C481 D17	C5537 E18	F5111 C13	IC5170 C14	L5021B C11	MS2 F18	R5168 D14	T16 B18
	CR0052 B6	CR0111 C4	CR0311 C4	CR0421 E2	CR0448 D1	CR0486 D1	CR1009 B5	CR5072 D7	CR5132 C6	CR5177 E5	CR5241 D6	CR5294 E6	CR5418 E4	CR5512 F1	CT 0327 B4		C491 C18	C5564 F18	F5141 D14	IC5180 F14	L5081 C11	MS3 F18	R5233 D13	T17 B18
	CR0053 B6	CR0116 D4	CR0316 D4	CR0422 E2	CR0449 C1	CR0487 D1	CR1016 F3	CR5081 C7	CR5133 C6	CR5178 E5	CR5242 D6	CR5295 E6	CR5419 E4	CR5513 F2	CT 0328 B4		C497 C18	C5583 E17	F5248 D13	IC5190 E13	L5031B D11	MS4 F18	R5338 F12	UB2 B13
	CR0054 B6	CR0117 C3	CR0317 B5	CR0423 E2	CR0461 D2	CR0488 D1	CR5011 D8	CR5083 C7	CR5136 C6	CR5181 E5	CR5246 D6	CR5296 F6	CR5420 E5	CR5516 E3	CT 0476 D1		C501 D18	CHINCH D18	F5328 E12	IC5260 E13	L5032 C11	QK5560 F18	R5464 F15	UB3 B12
	CR0055 B3	CR0118 D3	CR0322 B4	CR0426 D2	CR0462 D1	CR0489 D1	CR5012 D8	CR5086 C7	CR5137 C7	CR5182 F5	CR5261 E6	CR5297 F6	CR5421 E4	CR5517 F3	CT 0477 D1		C502 D18	CR502 C18	F5550 E18	IC5271 E13	L5032B D12	P1 C14	R5560 F17	
	CR0057 A5	CR0119 D4	CR0323 B4	CR0427 D2	CR0463 D2	CR0491 D1	CR5013 D8	CR5087 C7	CR5139 C7	CR5183 F5	CR5262 E6	CR5298 E5	CR5422 E5	CR5521 E2	CT 0479 E1		C1002 D15	C439 C17	I-MP E13	IC5280 C13	L5072 C12	P2 D16	T1 B13	
	CR0058 B5	CR0121 D4	CR0324 B4	CR0428 D2	CR0464 D2	CR0492 D1	CR5017 C8	CR5088 D7	CR5141 D5	CR5186 E5	CR5263 E6	CR5299 E6	CR5423 E4	CR5522 E2	CT 0491 D1		C5067 E12	C486 C18	IC105 B13	IC5290 F13	L5072B C12	P3 A13	T2 B13	

G F E D C B A

CIRCUIT DIAGRAM: SIGNAL CHASSIS

SIGNAL - CHASSIS

diese Widerstaende werden als Bruecken verwendet

IC110 PROZESSOR XC415266P

IC130 SN74154N

IC120 UAA2022

IC5430 SAA7500

IC105 MC33164

CIC310 HEF 4053

CIC420 HEF 4052 BT

IC115 ST24C04

IC116 ST24C08

KABEL- TUNER

AM-FM-PLATTE

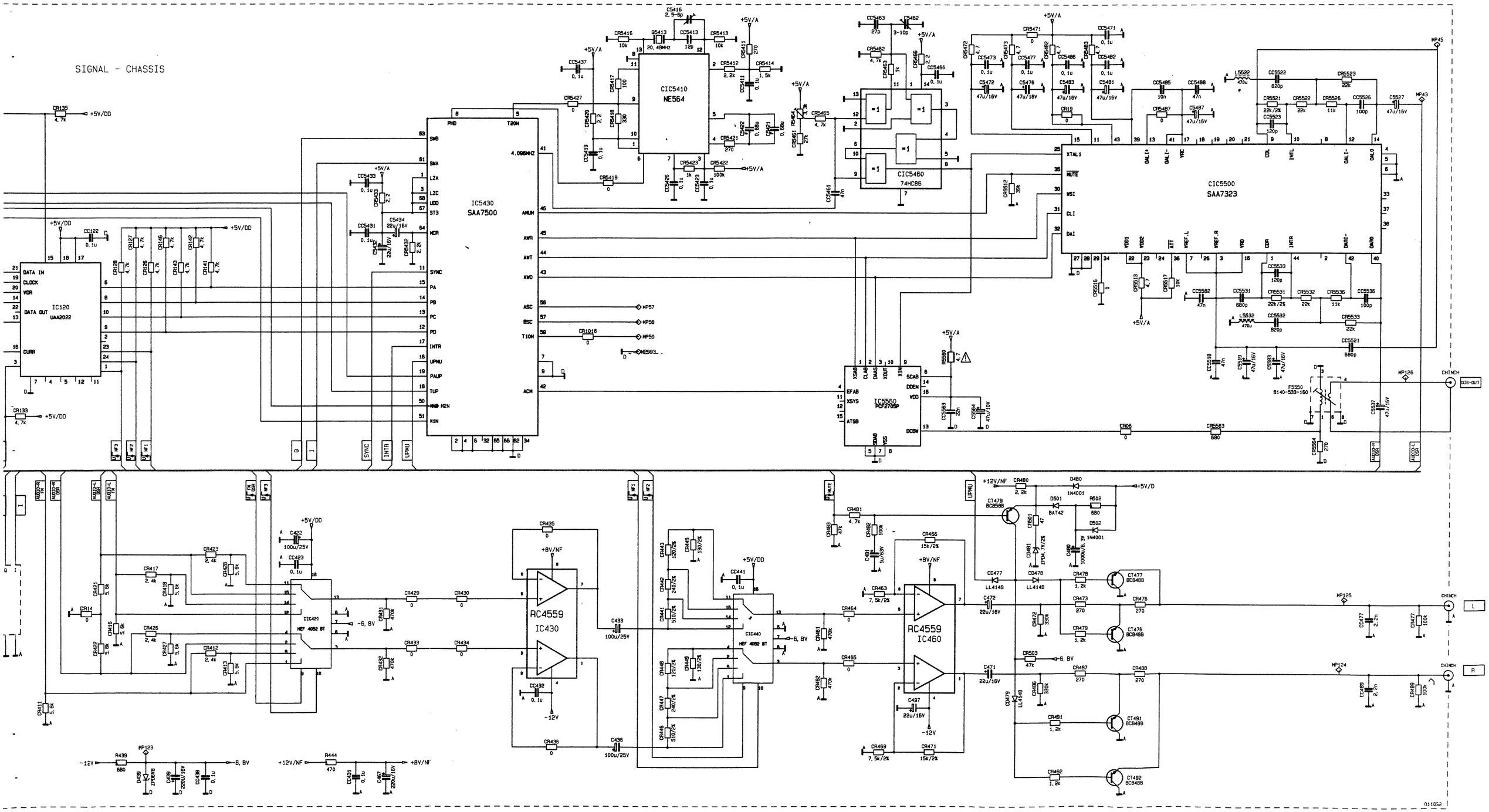
GPSK-DEMODULATOR

Display/Keyboard

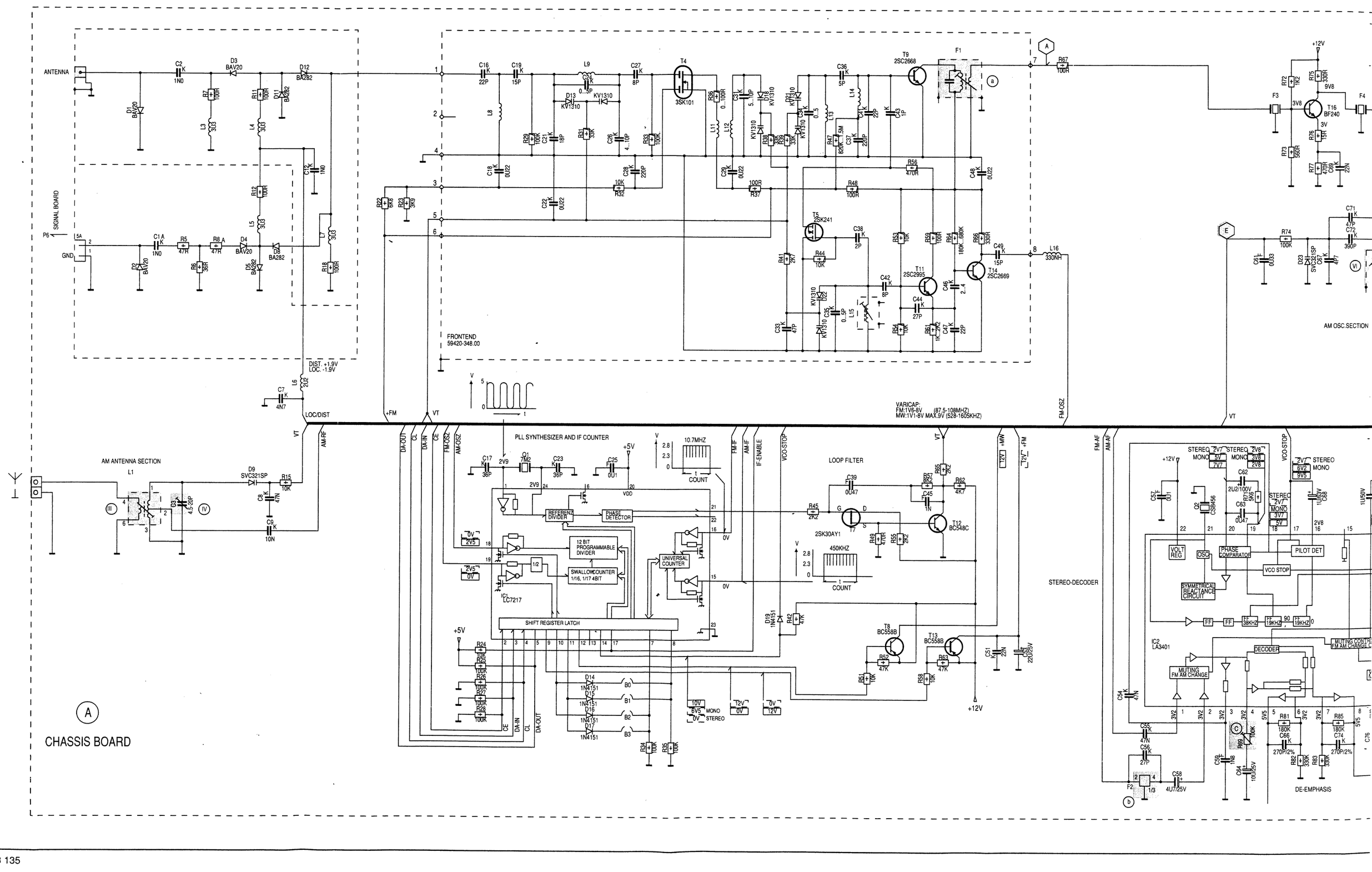
ACK
DATA
RESET
CLK

50-855MHz

SIGNAL - CHASSIS



CIRCUIT DIAGRAM: CHASSIS BOARD



AM-RF/IF AND FM-IF

AM OSC.SECTION

STEREO-DECODER

MPX FILTER

AF OUTPUT

IC3 LA1266

IC4 SAA6579T

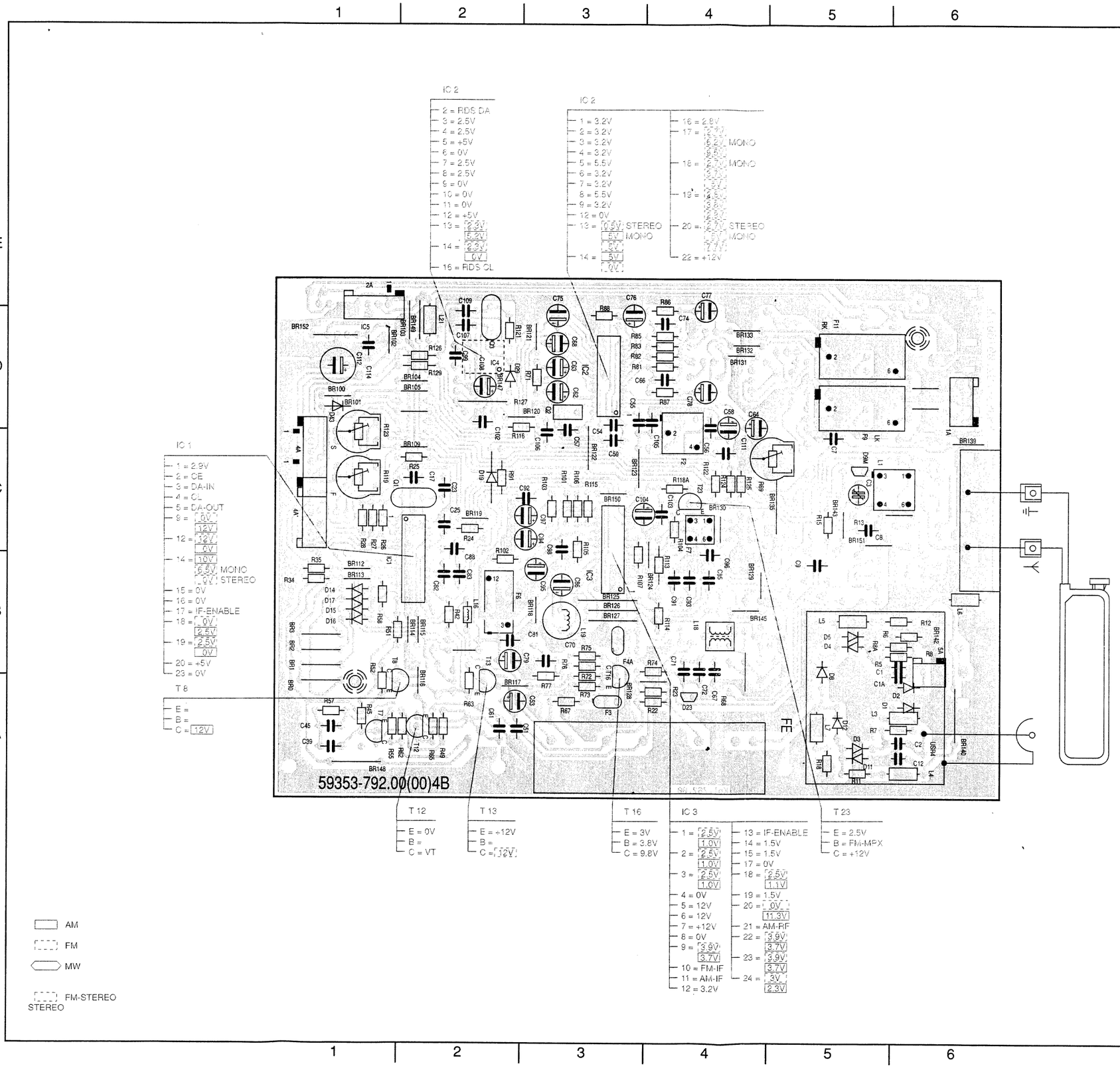
IC2 LA3401

VARICAP:
FM:1V6-8V (87,5-108MHZ)
MW:1V1-8V MAX.9V (528-1605KHZ)

SIGNAL BOARD → P4

SIGNAL BOARD → P5

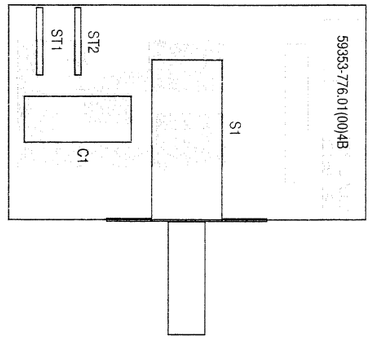
CHASSIS PCB

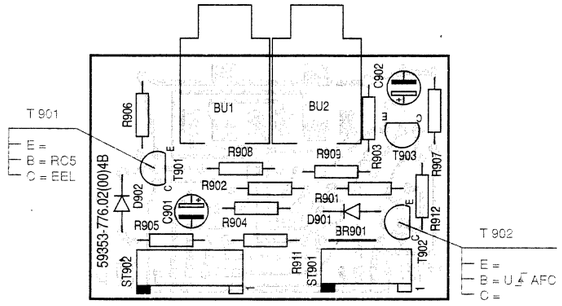


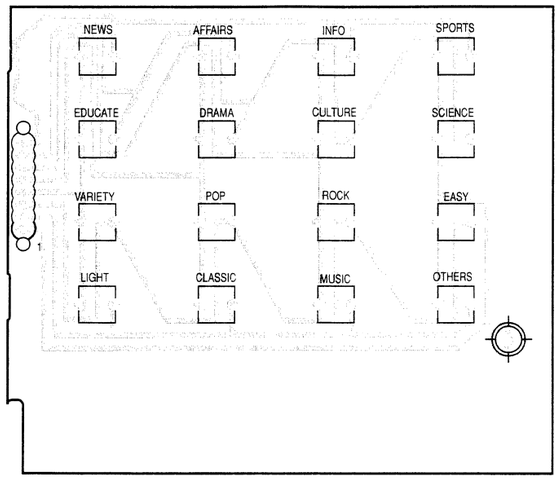
1A	D 6	C013	B 5	D16	B 1	R063	A 2
2A	E 1	C014	C 6	D17	B 1	R065	A 2
3A	E 1	C015	C 6	D19	C 2	R067	A 3
4A	C 1	C017	C 2	D23	A 4	R068	B 4
4A*	C 1	C023	C 2	D24	B 2	R069	C 5
5A	B 6	C025	C 2	D25	B 2	R071	D 3
ANT-TER	B 7	C032	C 2	D27	D 5	R072	B 3
B-TER.	C 6	C039	A 1	D28	D 5	R073	A 3
BU1	D 6	C045	A 1	D29	D 2	R074	B 4
CH.2POL	D 6	C051	A 2	D39	D 2	R075	B 3
BR000	A 1	C053	A 2	D41	D 5	R076	B 3
BR001	B 1	C054	D 3	D42	D 5	R077	B 3
BR002	B 1	C055	D 3	D43	D 1	R078	B 4
BR003	B 1	C056	D 4	F02	D 4	R081	D 4
BR100	D 1	C057	D 3	F03	A 3	R082	D 4
BR101	D 1	C058	D 4	F04A	B 3	R083	D 4
BR102	D 1	C059	C 3	F05	B 3	R084	D 2
BR103	D 2	C060	A 2	F06	B 2	R085	D 4
BR104	D 2	C061	A 2	F07	C 4	R086	E 4
BR105	D 2	C062	D 3	F08	C 4	R087	D 4
BR106	D 2	C063	D 3	F09	D 5	R088	D 3
BR107	D 2	C064	D 4	F11	D 5	R089	B 4
BR108	D 2	C065	B 5	IC1	B 2	R091	C 2
BR109	C 2	C066	D 4	IC2	D 3	R093	D 3
BR110	C 1	C067	B 4	IC3	C 3	R094	C 5
BR111	C 1	C068	D 3	IC4	D 2	R095	D 5
BR112	B 1	C069	B 3	IC5	D 1	R096	D 5
BR113	B 1	C070	B 3	L01	C 6	R097	D 5
BR114	B 2	C071	B 4	L02	B 6	R098	D 4
BR115	B 2	C072	B 4	L03	A 6	R099	D 4
BR116	A 2	C073	B 4	L04	A 6	R101	C 3
BR117	A 2	C074	D 4	L05	B 5	R102	B 2
BR118	B 3	C075	D 3	L06	B 6	R103	C 3
BR119	C 2	C076	D 3	L07	A 5	R104	C 4
BR120	D 3	C077	E 4	L16	B 2	R105	C 3
BR121	D 3	C078	D 4	L17	B 5	R106	C 3
BR122	C 3	C079	B 2	L18	B 4	R107	C 3
BR123	C 3	C081	B 2	L19	B 3	R108	D 6
BR124	C 4	C082	B 2	L21	D 2	R109	D 6
BR125	B 3	C083	B 2	Q1	C 2	R111	D 6
BR126	B 3	C084	E 4	Q2	D 3	R112	D 6
BR127	B 3	C085	B 4	Q3	D 2	R113	B 4
BR128	A 4	C086	B 3	R001	C 6	R114	B 4
BR129	B 4	C088	C 2	R002	C 6	R115	C 3
BR130	C 4	C089	D 5	R005	B 6	R116	D 3
BR131	D 4	C091	B 4	R006	B 6	R117	C 5
BR132	D 4	C092	C 3	R007	A 6	R118	C 4
BR133	D 4	C093	B 4	R008	B 6	R118A	C 4
BR134	D 5	C094	C 3	R008A	B 6	R119	C 1
BR135	C 5	C095	B 3	R009	B 6	R121	D 2
BR136	C 5	C096	C 4	R011	A 5	R122	C 4
BR137	C 5	C097	C 3	R012	B 6	R123	D 1
BR138	B 5	C098	C 3	R013	C 5	R124	C 4
BR139	C 6	C099	D 2	R014	C 6	R125	C 4
BR140	A 6	C102	D 2	R015	C 5	R126	D 2
BR141	A 5	C103	C 4	R016	C 5	R127	D 2
BR142	B 6	C104	C 4	R017	B 5	R128	D 2
BR143	C 5	C105	D 4	R018	A 5	R129	D 2
BR144	C 6	C106	D 3	R019	C 6	R131	E 5
BR145	B 4	C107	D 2	R021	C 6	R132	D 2
BR146	B 4	C108	D 2	R022	A 4	R133	B 5
BR147	D 2	C109	E 2	R023	A 4	R134	B 4
BR148	A 1	C111	C 4	R024	C 2	T01	C 6
BR149	D 2	C112	D 1	R025	C 2	T02	B 6
BR150	C 3	C113	D 1	R026	C 1	T03	C 6
BR151	C 5	C114	D 1	R027	C 1	T06	A 2
BR152	D 1	C115	D 6	R028	C 1	T07	A 1
BR153	C 5	D01	A 6	R034	B 1	T08	A 2
C001	B 6	D02	A 6	R035	B 1	T12	A 2
C001A	B 6	D03	A 5	R042	B 2	T13	A 2
C002	A 6	D04	B 5	R043	B 2	T15	B 4
C003	C 5	D05	B 5	R045	A 1	T16	B 3
C004	B 5	D06	C 5	R046	A 2	T17	B 4
C005	B 6	D07	B 5	R049	A 2	T18	D 5
C006	C 5	D08	B 5	R051	B 2	T19	D 4
C007	C 5	D09	C 5	R052	A 1	T21	D 4
C008	C 5	D09M	C 5	R055	A 1	T22	D 4
C009	B 5	D11	A 5	R057	A 1	T23	C 4
C010	B 5	D12	A 5	R058	B 1	T24	D 2
C011	B 5	D14	B 1	R060	A 1	T25	B 4
C012	A 6	D15	B 1	R062	A 2		

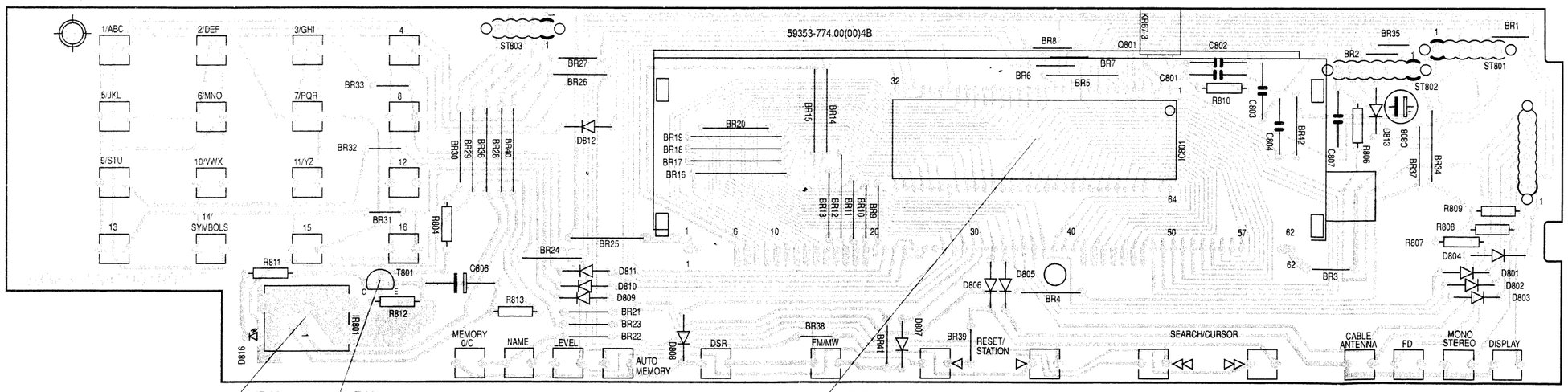
OPERATION PCB, EEL PCB, MAINS SWITCH PCB

47	F 8	14/SYMBOLS	B 2	EASY	E 10	SCIENCE	F 10	BR11	B 6	BR26	C 4	BR41	A 6	D804	B 11	IR801	A 3	R905	E 6	T801	B 3
48	C 11	15	B 3	EDUCATE	F 8	SPORTS	F 10	BR12	B 6	BR27	C 4	BR42	C 9	D805	B 7	Q801	C 8	R906	E 6	T901	E 6
1/ABC	C 1	16	B 3	FD	A 11	VARIETY	E 8	BR13	B 6	BR28	C 4	BR901	E 5	D806	B 7	R804	B 3	R907	E 5	T902	E 5
2/DEF	C 2	◁	A 7	FM/MW	A 6	BU1	E 6	BR14	C 6	BR29	C 4	C001	E 1	D807	A 7	R806	C 11	R908	E 6	T903	E 5
3/GHI	C 3	▷	A 7	INFO	F 10	BU2	E 5	BR15	C 6	BR30	C 4	C801	C 9	D808	A 5	R807	B 11	R909	E 5		
4	C 3	◁◁	A 8	LEVEL	A 4	BR01	C 11	BR16	B 5	BR31	B 3	C802	C 9	D809	B 4	R808	B 11	R911	E 6		
5/JKL	C 1	▷▷	A 9	LIGHT	E 8	BR02	C 11	BR17	B 5	BR32	C 3	C803	C 9	D810	B 4	R809	B 11	R912	E 5		
6/MNO	C 2	AFFAIRS	F 9	MEMORY 0/C	A 4	BR03	B 9	BR18	C 5	BR33	C 3	C804	C 9	D811	B 4	R810	C 9	S001	E 1		
7/PQR	C 3	AUTO MEMORY	A 5	MONO/STEREO	A 11	BR04	B 8	BR19	C 5	BR34	C 11	C806	B 4	D812	C 4	R811	B 2	ST001	E 1		
8	C 3	CABLE/ANTENNA	A 11	MUSIC	E 10	BR05	C 8	BR20	C 5	BR35	C 11	C807	C 9	D813	C 11	R812	A 3	ST002	E 1		
9/STU	B 1	CLASSIC	E 9	NAME	A 4	BR06	C 8	BR21	A 4	BR36	C 4	C808	C 11	D901	E 5	R813	A 4	ST801	C 11		
10/VWX	B 2	CULTURE	F 10	NEWS	F 8	BR07	C 8	BR22	A 4	BR37	B 11	C809	C 7	D902	E 6	R901	E 5	ST802	C 11		
11/YZ	B 3	DISPLAY	A 11	OTHER	E 10	BR08	C 8	BR23	A 4	BR38	A 6	D801	B 11	C901	E 6	R902	E 5	ST803	C 4		
12	B 3	DRAMA	F 9	POP	E 9	BR09	B 6	BR24	B 4	BR39	A 7	D802	B 11	C902	E 5	R903	E 5	ST901	F 5		
13	B 1	DSR	A 5	ROCK	E 10	BR10	B 6	BR25	B 5	BR40	C 4	D803	B 11	IC801	C 7	R904	E 6	ST902	F 6		









IR 801
- 1 = RC5
- 2 =
- 3 = 0V

T 801
- E = 0V
- B = LED PH
- C =

IC 801

1 = -27V	9 = DATA	17 = G3	25 = G11	33 = 7-2	41 = 5-4	49 = 4-1	57 = 2-3
2 = 4MHz	10 = PA3/KB3	18 = G4	26 = G12	34 = 7-1	42 = 5-3	50 = 3-5	58 = 2-2
3 = 4MHz	11 = PA2/KB2	19 = G5	27 = 7-5	35 = 6-5	43 = 5-2	51 = 3-4	59 = 2-1
4 = 0V	12 = PA1/KB1	20 = G6	28 = 7-4	36 = 6-4	44 = 5-1	52 = 3-3	60 = 1-5
5 = RESET	13 = PA0/KB0	21 = G7	29 = 7-3	37 = 6-3	45 = 4-5	53 = 3-2	61 = 1-4
6 = +5V/D	14 = +5V/D	22 = G8	30 = A3	38 = 6-2	46 = 4-4	54 = 3-1	62 = 1-3
7 = CLK	15 = G1	23 = G9	31 = A2	39 = 6-1	47 = 4-3	55 = 2-5	63 = 1-2
8 = ACKN	16 = G2	24 = G10	32 = A1	40 = 5-5	48 = 4-2	56 = 2-4	64 = 1-1

CIRCUIT DIAGRAM: OPERATION BOARD, EEL BOARD, MAINS SWITCH BOARD

OPERATION BOARD

DP801
CM1167G

IC801
XC404502
MOS

ST801
1 GND/A
2 +5V/D
3 +5V/A
4 -27V
5 F2
6 F1

ST802
7 GND/D
6 CLK
5 RESET
4 DATA
3 ACKN
2 START
1 +5V/D

ST803
5 LED PH
4 +5V/D
3 GND
2 RC5
1 +5V SWITCHED

D801 TD129
D802 TD129
D803 TD129
D804 TD129
D805 TD129
D806 TD129
D807 TD129
D808 TD129
D809 TD129
D810 TD129
D811 TD129
D813 TD129
D812 TD129

D816 CQY85N

R807 10K
R809 10K
R808 10K
R806 10K
R811 150R
R804 33K
R812 22K
R810 1M
R805 150R

T801 BC548B

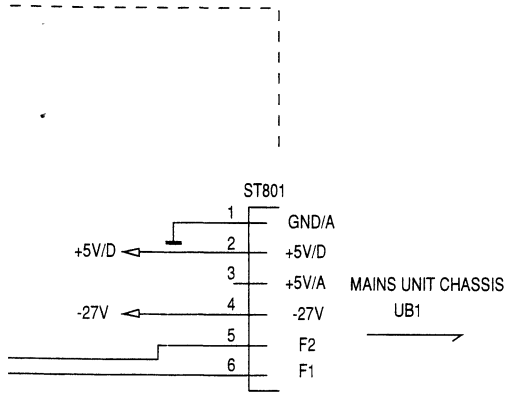
Q801 4MHZ

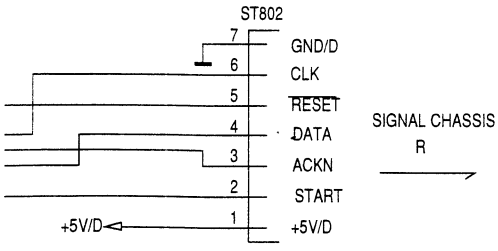
C807 K 100N
C805 100U/10V
C804 K 100N
C801 K 33P
C802 K 12P
C803 K 100N
C806 4U7/16V

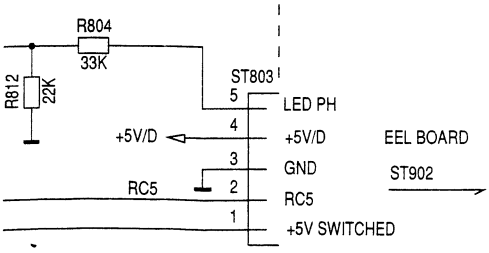
IR801
59800-787.00
VOUT
VCC
GND

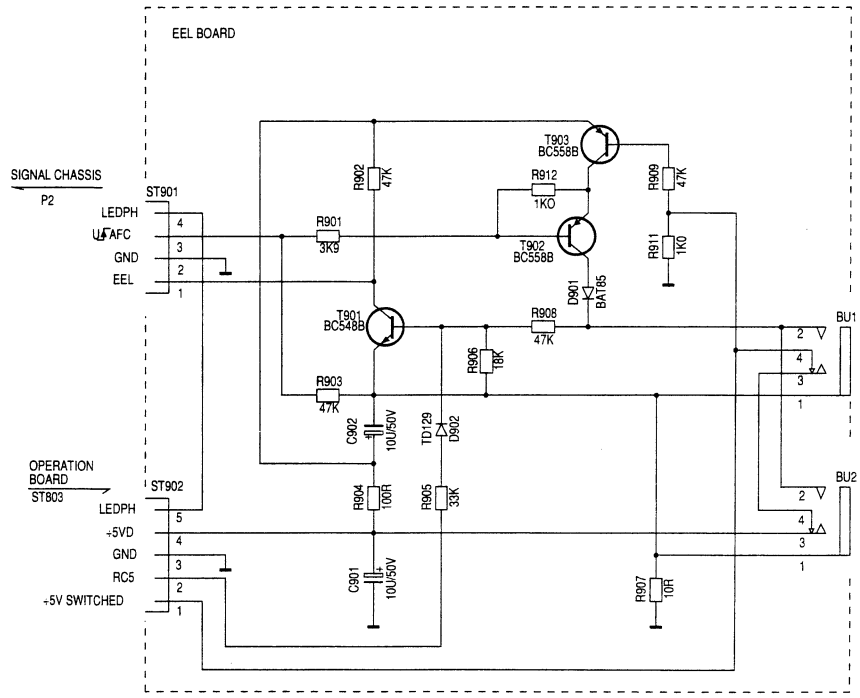
CULTURE	DRAMA	EDUCATE	SCIENCE	FD	<<	FM/AM	DSR	14	10	6	2
MUSIC	CLASSICS	LIGHT	OTHERS	DISPLAY	PRESET<	INIT	LEVEL	16	12	8	4
ROCK	POP	VARIETY	EASY	MONO/STERED	PRESET>		AUTO MEM.	15	11	7	3
INFO	AFFAIRS	NEWS	SPORTS	CABLE	SEARCH/ CURSOR >>	NAME	MEMORY	13	9	5	1

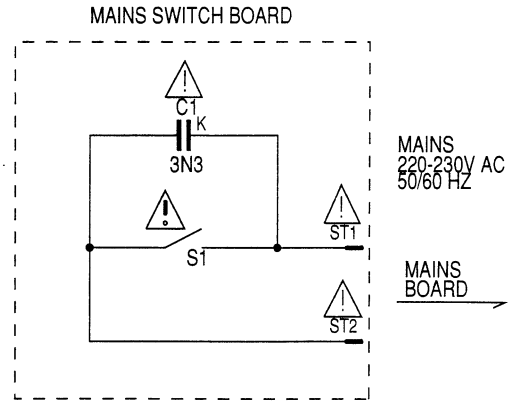
SEARCH/ CURSOR


ST801
1
GND/A
+5V/D
2
+5V/D
3
+5V/A
MAINS UNIT CHASSIS
UB1
-27V
4
-27V
5
F2
6
F1

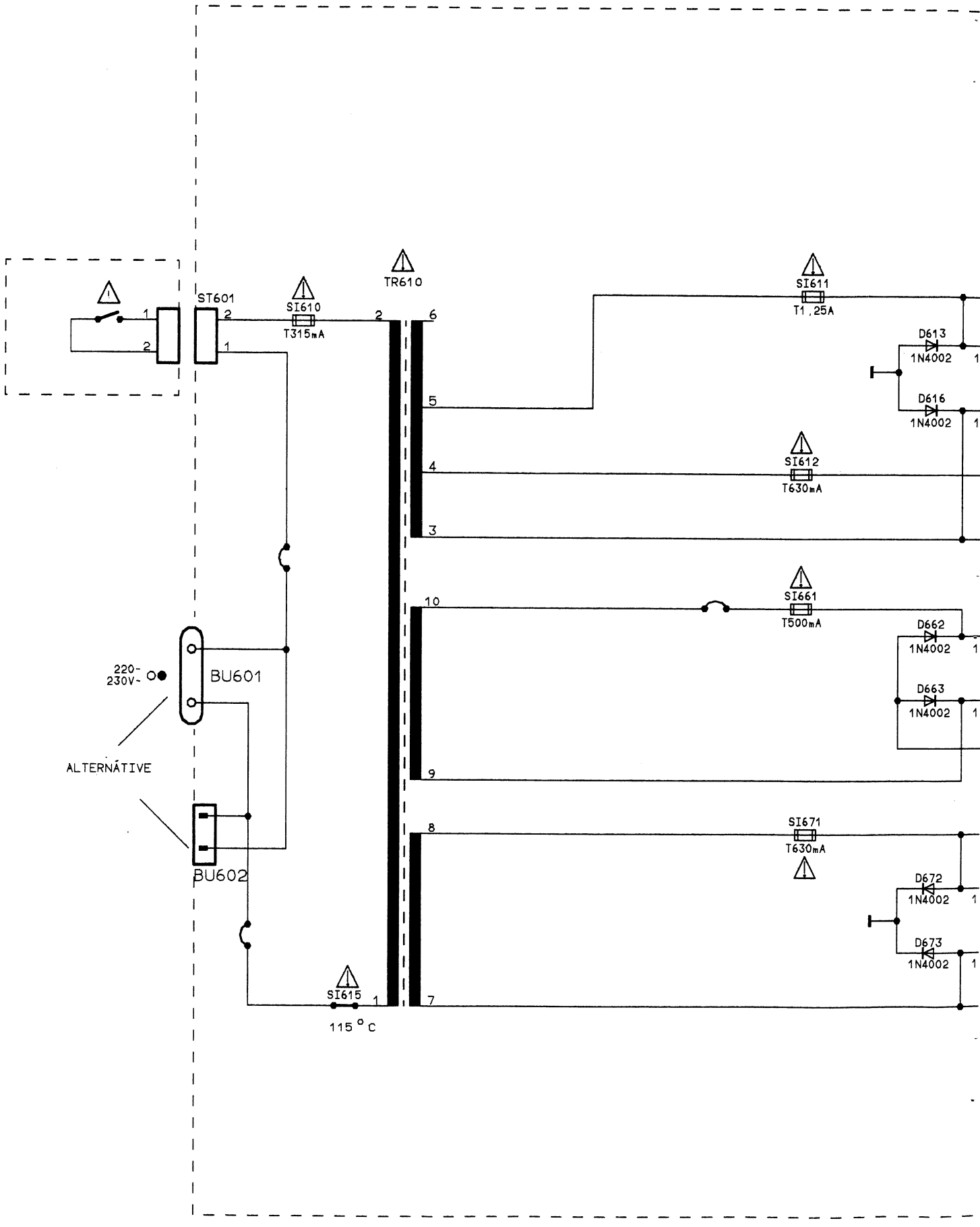

ST802
7
GND/D
6
CLK
5
RESET
4
DATA
3
ACKN
2
START
SIGNAL CHASSIS
R
+5V/D
1
+5V/D

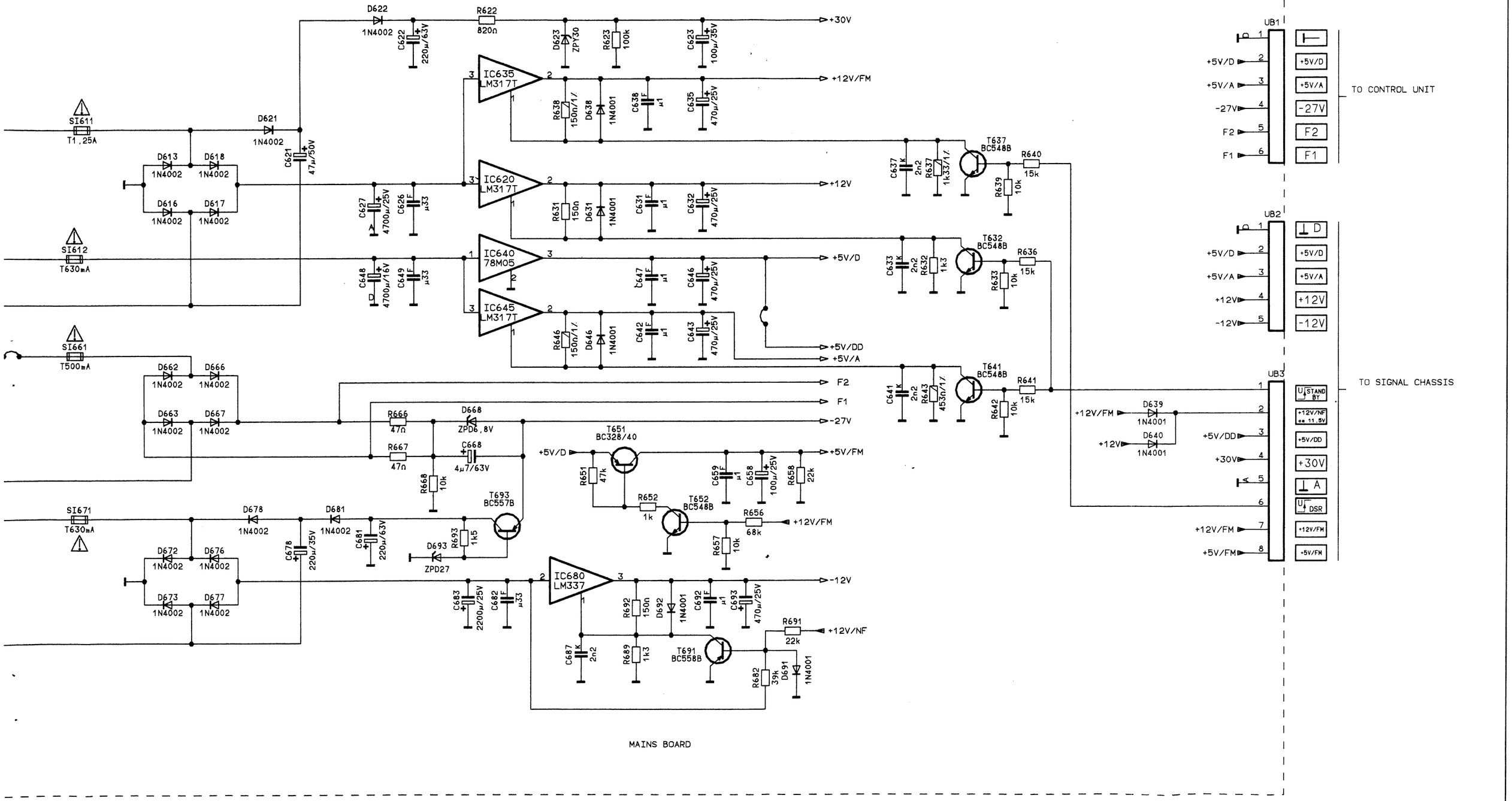

R804
33K
R812
22K
ST803
5
LED PH
+5V/D
4
+5V/D
EEL BOARD
3
GND
ST902
RC5
2
RC5
1
+5V SWITCHED


EEL BOARD
SIGNAL CHASSIS
P2
ST901
LEDPH
4
U AFC
3
GND
2
EEL
1
R901
3K9
R902
47K
T903
BC558B
R912
1KO
R909
47K
T902
BC558B
R911
1KO
D901
BA185
T901
BC548B
R908
47K
BU1
R906
18K
R903
47K
C902
1U/50V
TD129
D902
OPERATION
BOARD
ST803
ST902
LEDPH
5
+5VD
4
GND
3
RC5
2
+5V SWITCHED
1
R904
100R
R905
33K
C901
1U/50V
R907
10R
BU2


MAINS SWITCH BOARD
C1
K
3N3
S1
ST1
ST2
MAINS
220-230V AC
50/60 HZ
MAINS
BOARD

CIRCUIT DIAGRAM: MAINS BOARD

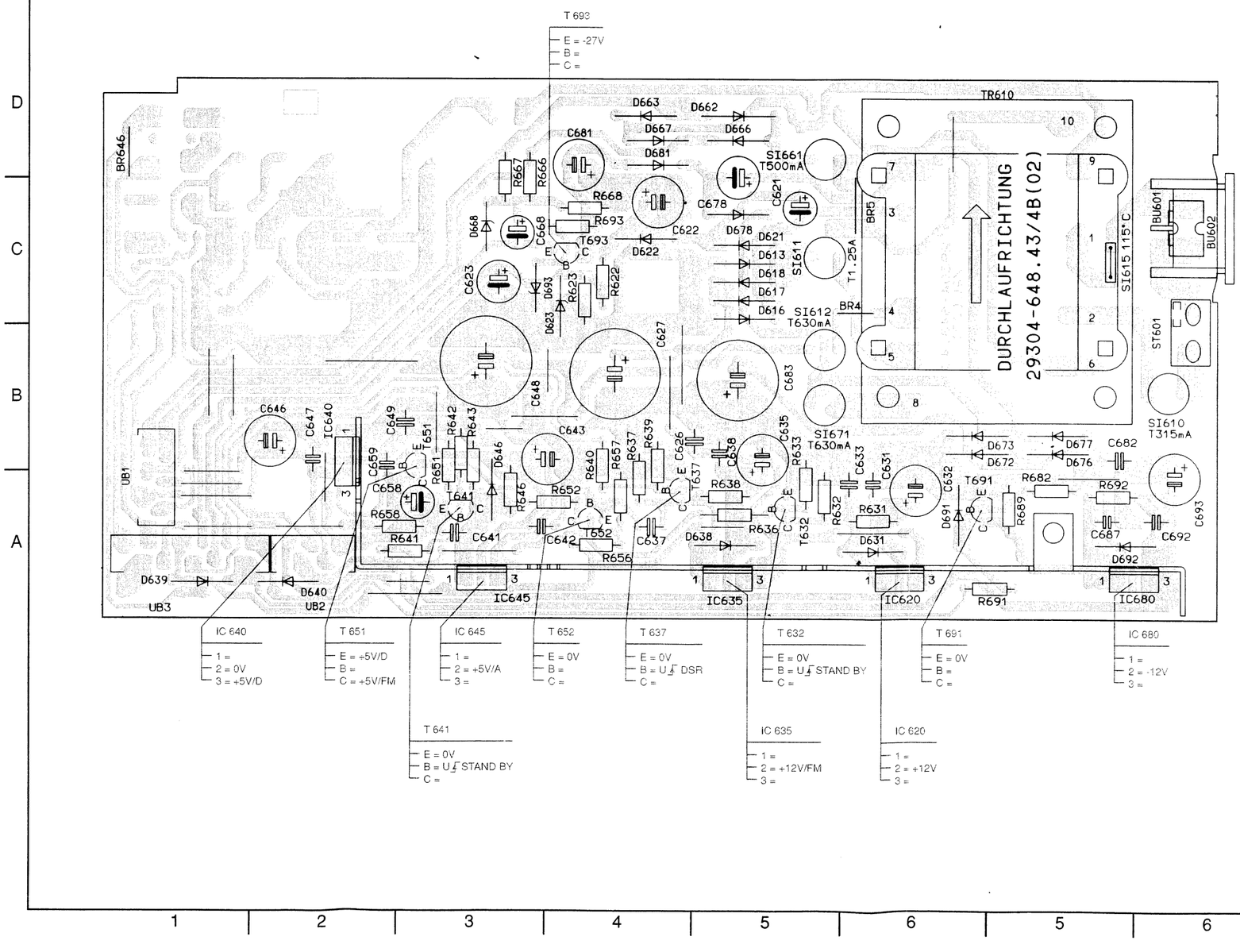



SI611
T1,25A
SI612
T630mA
SI661
T500mA
SI671
T630mA
D613 1N4002
D618 1N4002
D616 1N4002
D617 1N4002
D621 1N4002
C621 47µ/50V
D622 1N4002
C622 220µ/63V
R622 820Ω
D623 ZPY30
R623 100k
C623 100µ/35V
IC635 LM317T
R638 150Ω/1/
D638 1N4001
C638 F µ1
C635 470µ/25V
+30V
+12V/FM
C627 A 4700µ/25V
C626 F µ33
IC620 LM317T
R631 150Ω
D631 1N4001
C631 F µ1
C632 470µ/25V
+12V
C637 K 2n2
R637 1k33/1/
T637 BC548B
R640 15k
R639 10k
C648 D 4700µ/16V
C649 F µ33
IC640 78M05
C647 F µ1
C646 470µ/25V
+5V/D
C633 K 2n2
R632 1k3
T632 BC548B
R636 15k
R633 10k
IC645 LM317T
R646 150Ω/1/
D646 1N4001
C642 F µ1
C643 470µ/25V
+5V/DD
+5V/A
C641 K 2n2
R643 453Ω/1/
T641 BC548B
R641 15k
R642 10k
F2
F1
-27V
D662 1N4002
D666 1N4002
D663 1N4002
D667 1N4002
R666 47Ω
R667 47Ω
D668 ZPD6,8V
C668 4µ7/63V
R668 10k
T651 BC328/40
+5V/D
R651 47k
R652 1k
T652 BC548B
C659 F µ1
C658 100µ/25V
R658 22k
R656 68k
R657 10k
+5V/FM
+12V/FM
D672 1N4002
D676 1N4002
D673 1N4002
D677 1N4002
D678 1N4002
D681 1N4002
C678 220µ/35V
C681 220µ/63V
D693 ZPD27
R693 1k5
T693 BC557B
IC680 LM337
C683 2200µ/25V
C682 F µ33
R692 150Ω
D692
1N4001
C692 F µ1
C693 470µ/25V
-12V
C687 K 2n2
R689 1k3
T691 BC558B
R691 22k
+12V/NF
R682 39k
D691 1N4001
UB1
+5V/D
+5V/A
-27V
F2
F1
TO CONTROL UNIT
UB2
+5V/D
+5V/A
+12V
-12V
UB3
+12V/FM
D639 1N4001
+12V
D640 1N4001
+5V/DD
+30V
+12V/FM
+5V/FM
STAND BY
+12V/NF ca 11,5V
+5V/DD
+30V
A
DSR
+12V/FM
+5V/FM
TO SIGNAL CHASSIS

MAINS BOARD

MAINS PCB

BR4	C 6	C638	B 5	C687	A 7	D623	C 4	D678	C 5	IC680	A 7	R645	C 1	R701	C 2	REL.7	D 1	T706	C 1
BR5	C 6	C641	A 3	C692	A 8	D631	A 6	D681	D 4	IC700	C 2	R646	A 3	R702	D 2	RL645	D 1	T710	C 1
BR646	D 1	C642	A 3	C693	A 8	D638	A 5	D691	A 6	R622	C 4	R651	B 3	R703	C 2	SI610	B 8	TR610	C 7
BU601	C 8	C643	B 4	C700	C 3	D639	A 1	D692	A 7	R623	C 4	R652	A 4	R705	B 1	SI611	C 5	UB1	A 1
BU602	C 8	C646	B 2	C701	D 3	D640	A 2	D693	C 3	R631	A 6	R656	A 4	R706	C 1	SI612	B 5	UB2	A 2
C621	C 5	C647	B 2	C702	D 3	D646	A 3	D701	D 3	R632	A 5	R657	A 4	R707	C 1	SI661	D 5	UB3	A 1
C622	C 4	C648	B 3	C703	C 2	D662	D 5	D702	C 2	R633	A 5	R658	A 2	R708	C 1	SI671	B 5		
C623	C 3	C649	B 3	C704	C 2	D663	D 4	D703	C 2	R636	A 5	R666	D 3	R709	C 1	SI701	D 5		
C626	B 4	C658	A 3	C705	C 3	D666	D 5	D704	C 1	R637	A 4	R667	D 3	R710	C 1	ST601	B 8		
C627	B 4	C659	B 2	D613	C 5	D667	D 4	D707	A 1	R638	A 5	R668	C 4	R711	B 1	T632	A 5		
C631	A 6	C668	C 3	D616	C 5	D668	C 3	D708	A 1	R639	B 4	R682	A 7	REL.1	A 1	T637	A 4		
C632	A 6	C678	C 5	D617	C 5	D672	B 6	IC620	A 6	R640	B 4	R689	A 7	REL.1	C 1	T641	A 3		
C633	A 6	C681	D 4	D618	C 5	D673	B 6	IC635	A 5	R641	A 3	R691	A 7	REL.5	C 5	T651	B 3		
C635	B 5	C682	B 7	D621	C 5	D676	B 7	IC640	B 2	R642	B 3	R692	A 7	REL.5	D 1	T691	A 6		
C637	A 4	C683	B 5	D622	C 4	D677	B 7	IC645	A 3	R643	B 3	R693	C 4	REL.7	C 5	T693	C 4		



COMPONENTS

ATTENTION !
OBSERVE MOS COMPONENTS HANDLING INSTRUCTIONS WHEN SERVICING.

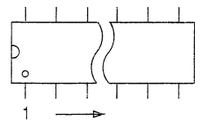
⚠ ABSOLUTELY NECESSAIRY FOR THE SAFETY OF THE SET.THESE COMPONENTS MEET THE SAFETY REQUIREMENT ACCORDING TO VDE OR IEC. MUST BE REPLACED BY PARTS OF SAME SPECIFICATION ONLY.

RESISTOR

- KSW 0204 DIN
- MSW 0204 DIN
- KSW 0207 DIN
- MSW 0207 DIN
- KSW 0411 DIN
- KSW 0617 DIN
- MSW 0309 DIN
- NTC
- WIRE
- METAL OXYDE
- LOW NOISE
- LOW FLAMMABILITY
- SAFETY RESISTOR

CAPACITOR

- ELECTROLYTIC
- TANTALUM ELEC.
- FOIL
- CERAMIC
- MICA
- MULTILAYER
- POLYPROPYLEN (KS-KP)
- BIPOLAR



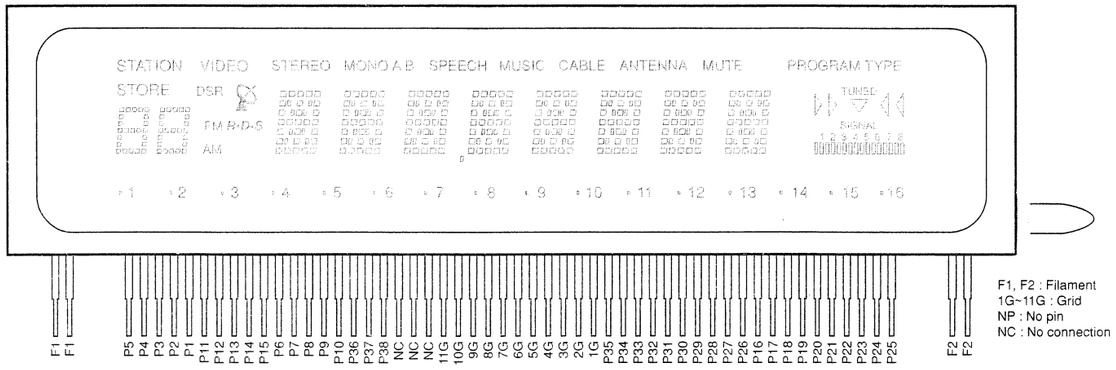
XC404502B MOS
MC68HC05 MOS

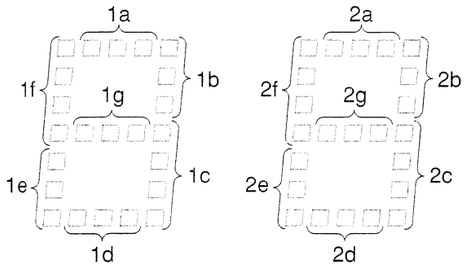
BC338
BC548
BC558

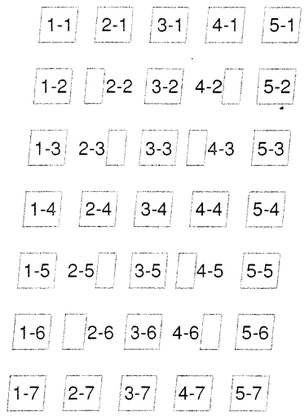
- AM
- FM
- MW
- FM-STEREO STEREO

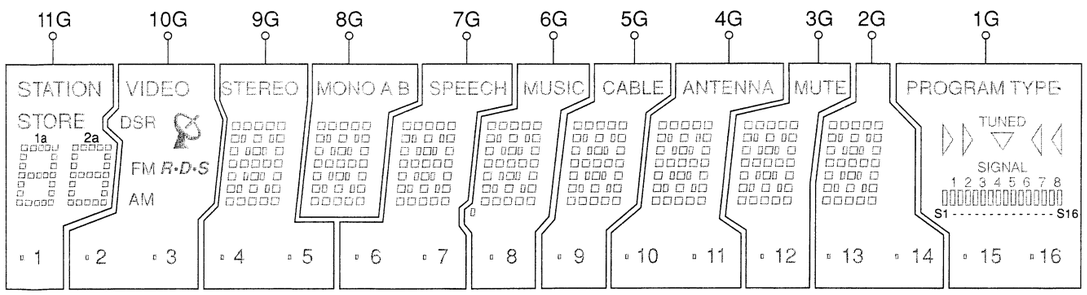
IF NOT OTHERWISE INDICATED ALL VOLTAGES ARE MEASURED AGAINST CHASSIS WITH A VOLTMETER(RI=10 MOHM). THE VALUES ARE VALID FOR 220V AC MAINS VOLTAGES.

DISPLAY


STATION VIDEO STEREO MONO A B SPEECH MUSIC CABLE ANTENNA MUTE PROGRAM TYPE
STORE DSR
FM R·D·S
AM
TUNED
SIGNAL
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
F1 F1 P5 P4 P3 P2 P1 P11 P12 P13 P14 P15 P6 P7 P8 P9 P10 P36 P37 P38 NC NC NC 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G P35 P34 P33 P32 P31 P30 P29 P28 P27 P26 P16 P17 P18 P19 P20 P21 P22 P23 P24 P25 F2 F2
F1, F2 : Filament
1G~11G : Grid
NP : No pin
NC : No connection

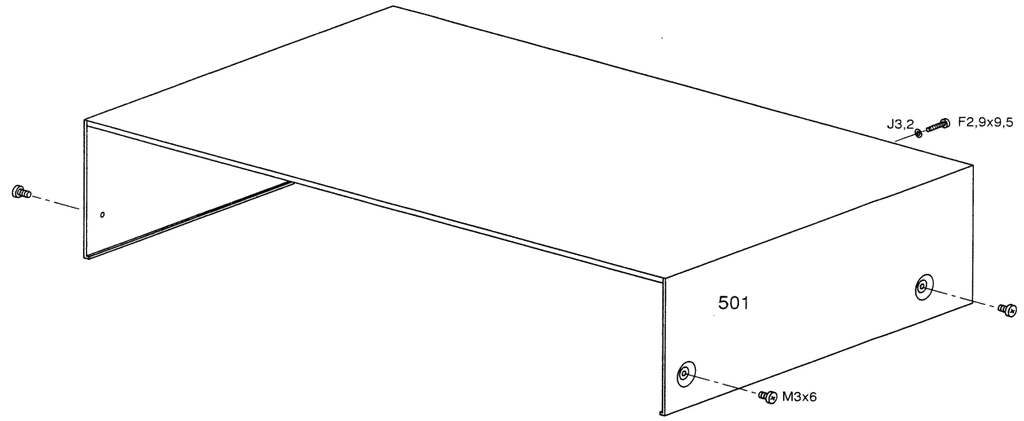


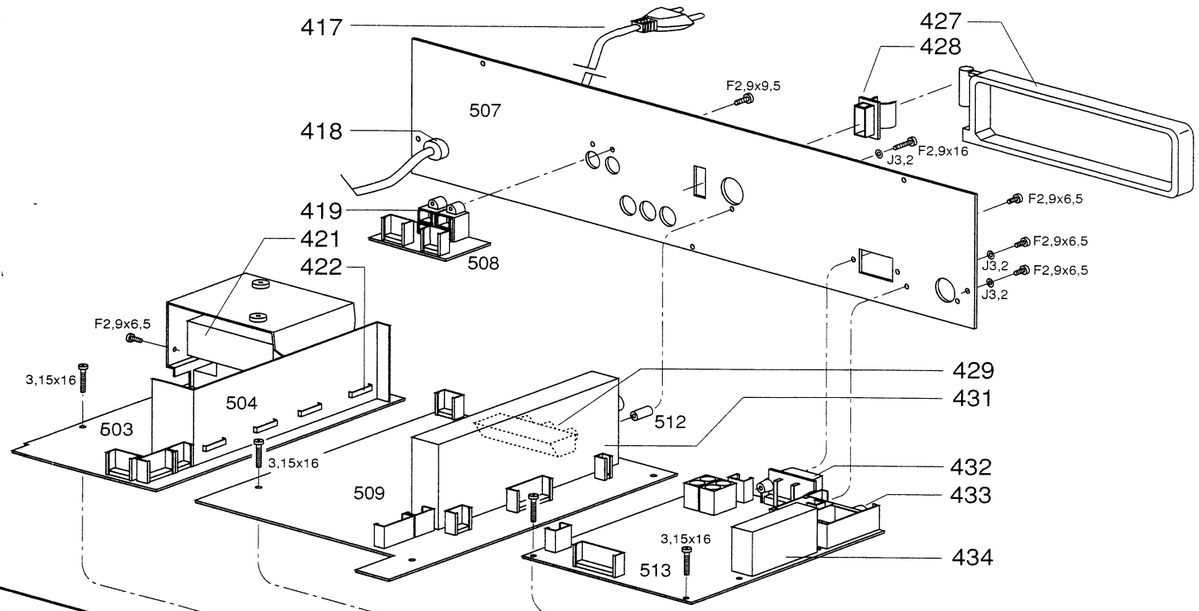


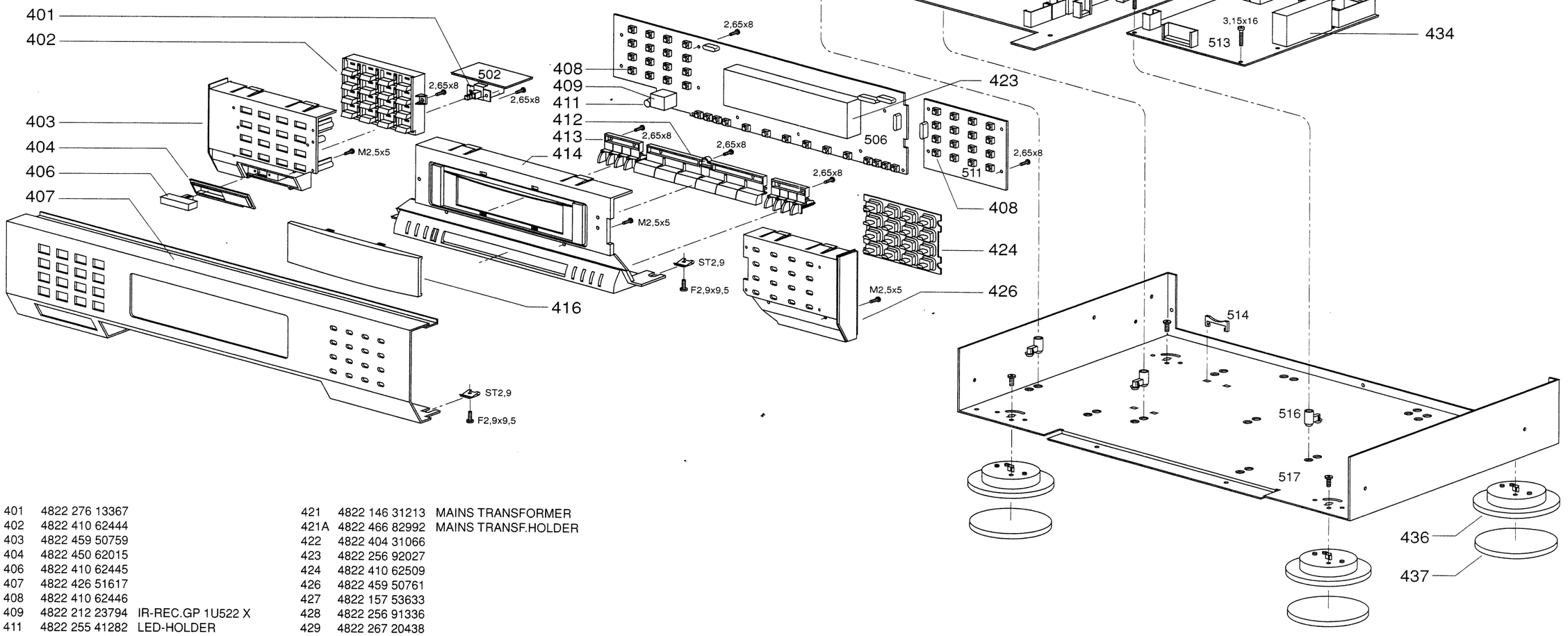

11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
STATION VIDEO STEREO MONO A B SPEECH MUSIC CABLE ANTENNA MUTE PROGRAM TYPE
STORE DSR
1a 2a
FM R·D·S
AM
TUNED
SIGNAL
1 2 3 4 5 6 7 8
S1 S16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	1d	AM	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	-
P2	1e	FM	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	-
P3	1c	R·D·S	3-7	3-7	3-7	3-7	3-7	3-7	3-7	3-7	-
P4	1g	DSR	2-7	2-7	2-7	2-7	2-7	2-7	2-7	2-7	-
P5	1f		1-7	1-7	1-7	1-7	1-7	1-7	1-7	1-7	-
P6	-	-	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	-
P7	-	-	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	-
P8	-	-	3-6	3-6	3-6	3-6	3-6	3-6	3-6	3-6	-
P9	-	-	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	-
P10	2b	-	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	-
P11	2c	VIDEO	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	-
P12	-	-	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	-
P13	-	-	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	
P14	-	-	2-5	2-5	2-5	2-5	2-5	2-5	2-5	2-5	
P15	-	-	1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5	
P16	-	-	5-4	5-4	5-4	5-4	5-4	5-4	5-4	5-4	TUNED
P17	-	-	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	
P18	2f	-	3-4	3-4	3-4	3-4	3-4	3-4	3-4	3-4	
P19	-	-	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	S16
P20	-	-	1-4	1-4	1-4	1-4	1-4	1-4	1-4	1-4	S15
P21	-	-	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	S14
P22	-	-	4-3	4-3	4-3	4-3	4-3	4-3	4-3	4-3	S13
P23	-	-	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	S12
P24	-	-	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	S11
P25	2g	-	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	S10
P26	2e	-	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	S9
P27	-	-	4-2	4-2	4-2	4-2	4-2	4-2	4-2	4-2	S8
P28	-	-	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	S7
P29	-	-	2-2	2-2	2-2	2-2	2-2	2-2	2-2	2-2	S6
P30	2d	-	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	S5
P31	-	-	5-1	5-1	5-1	5-1	5-1	5-1	5-1	5-1	S4
P32	2a	-	4-1	4-1	4-1	4-1	4-1	4-1	4-1	4-1	S3
P33	-	-	3-1	3-1	3-1	3-1	3-1	3-1	3-1	3-1	S2
P34	1b	-	2-1	2-1	2-1	2-1	2-1	2-1	2-1	2-1	S1
P35	1a	-	1-1	1-1	1-1	1-1	1-1	1-1	1-1	1-1	SIGNAL 1 2 3 4 5 6 7 8
P36	STATION	2	STEREO	MONO	SPEECH	MUSIC	CABLE	ANTENNA	MUTE	13	PROGRAM TYPE
P37	STORE	3	4	A	6	8	9	10	12	14	15
P38	1	-	5	B	7	8	-	11	-	-	16

EXPLODED VIEW, LIST OF MECHANICAL PARTS







401	4822 276 13367	
402	4822 410 62444	
403	4822 459 50759	
404	4822 450 62015	
406	4822 410 62445	
407	4822 426 51617	
408	4822 410 62446	
409	4822 212 23794	IR-REC.GP 1U522 X
411	4822 255 41282	LED-HOLDER
412	4822 410 62508	
413	4822 410 62511	
414	4822 459 50762	
416	4822 450 61935	
417	4822 321 22917	MAINSCORD CPL
418	4822 325 50164	MCORD INLETPART
419	4822 267 31615	
421	4822 146 31213	MAINS TRANSFORMER
421A	4822 466 82992	MAINS TRANSF.HOLDER
422	4822 404 31066	
423	4822 256 92027	
424	4822 410 62509	
426	4822 459 50761	
427	4822 157 53633	
428	4822 256 91336	
429	4822 267 20438	
431	4822 210 10529	
432	4822 290 40315	
433	4822 267 31633	
434	4822 210 10531	
436	4822 462 41888	
437	4822 462 41887	

IR-TRANSMITTER 4822 218 10498

LIST OF ELECTRICAL PARTS

CIC 0310	5322 209 14481	SMD IC HEF 4053 BT
CIC 0420	5322 209 11102	SMD IC HEF 4052 BT
CIC 0440	5322 209 11102	SMD IC HEF 4052 BT
CIC 5110	4822 209 32167	SMD IC U 4744 B
CIC 5310	4822 209 32167	SMD IC U 4744 B
CIC 5410	5322 209 81507	SMD IC NE 564
CIC 5460	4822 209 32232	SMD IC 74 HC 86
CIC 5500	4822 209 32168	SMD IC SAA 7323
IC 0001	4822 209 30178	IC LC 7218
IC 0002	4822 209 73434	IC LA 3401
IC 0003	4822 209 71785	IC LA 1266
IC 0004	4822 209 31981	IC SAA 6579 T
IC 0105	4822 209 32231	IC MC 33164 P-5RP
IC 0110	4822 209 32086	IC MC 68 HC 05 T3
IC 0116	4822 209 30954	IC ST 24 C 08
IC 0120	4822 209 61901	IC UAA 2022
IC 0130	5322 209 84479	IC SN 74164 N
IC 0430	4822 209 70414	IC RC 4559 NB
IC 0460	4822 209 70414	IC RC 4559 NB
IC 0620	4822 209 80591	IC LM 317 T
IC 0635	4822 209 80591	IC LM 317 T
IC 0640	4822 209 63277	IC 78 M 05 2%
IC 0645	4822 209 80591	IC LM 317 T
IC 0680	5322 209 81236	IC LM 337 T
IC 0801	4822 209 32229	IC XC 404502 B
IC 5120	4822 209 32164	IC NE 602 PHI
IC 5130	4822 209 32164	IC NE 602 PHI
IC 5170	4822 209 30404	IC NE 592 N8PHI
IC 5180	4822 209 32162	IC S 042 PSIE
IC 5190	5322 209 14441	IC NE 521 PHI
IC 5260	4822 209 30404	IC NE 592 N8PHI
IC 5271	4822 209 11345	IC MC 78 L 08 ACPRP
IC 5280	4822 209 30404	IC NE 592 N8
IC 5290	4822 209 32162	IC S 042 P
IC 5320	4822 209 32166	IC U 891 BS
IC 5325	4822 209 32165	IC U 829 B
IC 5335	4822 209 61387	IC LM 258 N
IC 5430	4822 209 32163	IC SAA 7500 PHI
IC 5560	4822 209 30366	IC PCF 2705 PPHI

CT 0320	5322 130 41983	SMD-TRANS.BC 858 B
CT 0327	5322 130 41983	SMD-TRANS.BC 858 B
CT 0328	5322 130 41982	SMD-TRANS.BC 848 B
CT 0476	5322 130 41982	SMD-TRANS.BC 848 B
CT 0477	5322 130 41982	SMD-TRANS.BC 848 B
CT 0479	5322 130 41983	SMD-TRANS.BC 858 B
CT 0491	5322 130 41982	SMD-TRANS.BC 848 B
CT 0492	5322 130 41982	SMD-TRANS.BC 848 B
CT 5162	4822 130 60511	SMD-TRANS.BC 847 B
CT 5237	5322 130 42145	SMD-TRANS.BFR92 AL
CT 5238	5322 130 42145	SMD-TRANS.BFR92 AL

T 0007	4822 130 42121	TRANS.2 SK 30 A-TMY1
T 0008	4822 130 44197	TRANS.BC 558 B
T 0012	4822 130 44196	TRANS.BC 548 C
T 0013	4822 130 44197	TRANS.BC 558 B
T 0016	4822 130 40902	TRANS.BF 240
T 0023	4822 130 40937	TRANS.BC 548 B
T 0632	4822 130 40937	TRANS.BC 548 B
T 0637	4822 130 40937	TRANS.BC 548 B
T 0641	4822 130 40937	TRANS.BC 548 B
T 0651	4822 130 41715	TRANS.BC 328-40
T 0652	4822 130 40937	TRANS.BC 548 B
T 0691	4822 130 44197	TRANS.BC 558 B
T 0693	4822 130 44568	TRANS.BC 557 B
T 0801	4822 130 40937	TRANS.BC 548 B
T 0901	4822 130 40937	TRANS.BC 548 B
T 0902	4822 130 44197	TRANS.BC 558 B
T 0903	4822 130 44197	TRANS.BC 558 B

CD 0311	4822 130 83336	SMD-DIODE BAR 42
CD 0329	4822 130 83338	MELF-DIODE LL 4148
CD 0477	4822 130 83338	MELF-DIODE LL 4148
CD 0478	4822 130 83338	MELF-DIODE LL 4148
CD 0479	4822 130 83338	MELF-DIODE LL 4148
CD 0481	4822 130 83337	MELF-Z D 4.7B0.5W
CD 5166	5322 130 81894	SMD-D BAS70SOT23
CD 5243	4822 130 83353	KAP.PLAST-DIODE B7P
CD 5247	4822 130 83352	KAP.PLAST-DIODE B5P
D 0001	4822 130 34189	DIODE BAV 20
D 0002	4822 130 34189	DIODE BAV 20
D 0003	4822 130 34189	DIODE BAV 20
D 0004	4822 130 34189	DIODE BAV 20
D 0005	4822 130 80638	DIODE BA 282
D 0008	4822 130 80638	DIODE BA 282
D 0009	4822 130 81002	D SVC 321 SP-A/B/C/D
D 0011	4822 130 80638	DIODE BA 282
D 0012	4822 130 80638	DIODE BA 282
D 0014	5322 130 34052	DIODE 1 N 4151
D 0015	5322 130 34052	DIODE 1 N 4151
D 0016	5322 130 34052	DIODE 1 N 4151
D 0017	5322 130 34052	DIODE 1 N 4151
D 0019	5322 130 34052	DIODE 1 N 4151
D 0023	4822 130 81002	D SVC321SP-A/B/C/D
D 0029	5322 130 34052	DIODE 1 N 4151
D 0439	4822 130 33783	Z DIODE 6.8 C 0.5W
D 0480	4822 130 31438	DIODE 1 N 4001
D 0501	4822 130 31353	D BAT42/43BAT85/86
D 0502	4822 130 31438	DIODE 1 N 4001
D 0613	5322 130 30684	DIODE 1 N 4002
D 0616	5322 130 30684	DIODE 1 N 4002
D 0617	5322 130 30684	DIODE 1 N 4002
D 0618	5322 130 30684	DIODE 1 N 4002
D 0621	5322 130 30684	DIODE 1 N 4002

D 0622	5322 130 30684	DIODE 1 N 4002
D 0623	4822 130 83341	Z DIODE 30 C 1.3W
D 0631	4822 130 31438	DIODE 1 N 4001
D 0638	4822 130 31438	DIODE 1 N 4001
D 0639	4822 130 31438	DIODE 1 N 4001
D 0640	4822 130 31438	DIODE 1 N 4001
D 0646	4822 130 31438	DIODE 1 N 4001
D 0662	5322 130 30684	DIODE 1 N 4002
D 0663	5322 130 30684	DIODE 1 N 4002
D 0666	5322 130 30684	DIODE 1 N 4002
D 0667	5322 130 30684	DIODE 1 N 4002
D 0668	4822 130 33783	Z DIODE 6.8 C 0.5W
D 0672	5322 130 30684	DIODE 1 N 4002
D 0673	5322 130 30684	DIODE 1 N 4002
D 0676	5322 130 30684	DIODE 1 N 4002
D 0677	5322 130 30684	DIODE 1 N 4002
D 0678	5322 130 30684	DIODE 1 N 4002
D 0681	5322 130 30684	DIODE 1 N 4002
D 0691	4822 130 31438	DIODE 1 N 4001
D 0692	4822 130 31438	DIODE 1 N 4001
D 0693	4822 130 83339	Z DIODE 27 C 0.5W
D 0801	4822 130 81769	DIODE TD 129
D 0802	4822 130 81769	DIODE TD 129
D 0803	4822 130 81769	DIODE TD 129
D 0804	4822 130 81769	DIODE TD 129
D 0805	4822 130 81769	DIODE TD 129
D 0806	4822 130 81769	DIODE TD 129
D 0807	4822 130 81769	DIODE TD 129
D 0808	4822 130 81769	DIODE TD 129
D 0809	4822 130 81769	DIODE TD 129
D 0810	4822 130 81769	DIODE TD 129
D 0811	4822 130 81769	DIODE TD 129
D 0812	4822 130 81769	DIODE TD 129
D 0813	4822 130 81769	DIODE TD 129
D 0816	4822 130 31613	LE DIODE CQY 85 N
D 0901	4822 130 31353	D BAT42/43/BAT85/86
D 0902	4822 130 81769	DIODE TD 129

F 0002	4822 214 51727	FILTER (NEXTCH)
F 0003	4822 157 62739	KERAMIK-FILTER70
F 0004	4822 157 62739	KERAMIK-FILTER70
F 0006	4822 242 72289	AM-ZF SFL 450 J3
F 0007	4822 156 11092	FM-D M.I
F 0009	4822 156 11104	FILTER (PILOT)LPF-V2
F 0011	4822 156 11104	FILTER (PILOT)LPF-V2
F 5111	4822 157 70429	OFW Y 6960 118MHZ
F 5141	4822 157 70426	COIL 7X7 740 F692
F 5248	4822 157 70427	COIL 7X7 741 F693
F 5328	4822 157 70428	FILTER 7X7 400 F668
F 5550	4822 157 62836	COIL 7X7 160 F711
L 0001	4822 156 11094	MW-VORKR.
L 0003	4822 157 62299	DR AX 0309-GA 3.3UH
L 0004	4822 157 62299	DR AX 0309-GA 3.3UH
L 0005	4822 157 62299	DR AX 0309-GA 3.3UH
L 0006	4822 157 70177	DR AX 0411-GA 2.2UH

L 0007	4822 157 62299	DR AX 0309-GA 3.3UH
L 0016	4822 157 70423	DR AX 0207-GA 0.33UH
L 0018	4822 156 11089	COIL (MW-OSC.)
L 0019	4822 157 53632	CHOKECL39 MH 5%
L 0019	4822 157 70425	DR 39MH
L 0021	4822 157 70178	DR AX 0309-GA22UH
L 5173	4822 157 70424	DR AX 0309-GA 1.5UH
L 5176	4822 157 70424	DR AX 0309-GA 1.5UH
L 5232	4822 157 70424	DR AX 0309-GA 1.5UH
L 5283	4822 157 70424	DR AX 0309-GA 1.5UH
L 5289	4822 157 70424	DR AX 0309-GA 1.5UH
Q 0001	4822 242 72294	QUARZ 7.2 MHZ
Q 0002	4822 242 72295	CER.RES.10CSB 456 F1
Q 0003	4822 242 81319	QUARZ4.332 MHZ
Q 0111	4822 242 81422	CER.RES.85 4.00 MG
Q 0801	4822 242 81422	CER.RES.85 4.00 MG
Q 5413	4822 242 81421	QUARZ 20.48 MHZ

C 0001	4822 126 12584	SI-KERA-SG3300PF20%
C 0003	4822 125 50329	TR.13 4.5/20PF VCT 5
C 0480	4822 124 80464	ELCO CB1000UF10V
C 0627	4822 124 42258	ELCO CB4700UF25V
C 0648	4822 124 23506	ELCO CB4700UF16V
C 0683	4822 124 21511	ELCO CB2200UF25V
C 5416	4822 125 50636	TR.11 2.5/6PFVCT56
C 5462	4822 125 50386	TR.12 3/10PFVCT56
CC 0102	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0104	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0106	4822 122 31772	KEFQ 1206 47PF5%
CC 0109	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0111	4822 122 32482	KEFQ 1206 22PF5%
CC 0112	4822 122 32482	KEFQ 1206 22PF5%
CC 0115	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0116	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0118	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0121	5322 122 31647	KEFQ 1206 1000PF 20%
CC 0122	4822 126 12606	KEFQ 0805 0.1UF 20%
CC 0311	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0312	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0316	5322 122 31647	KEFQ 1206 1000PF 20%
CC 0317	5322 122 31647	KEFQ 1206 1000PF 20%
CC 0328	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0332	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0423	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0431	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0432	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0438	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0441	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 0477	4822 122 31644	KEFQ 1206 2200PF 10%
CC 0489	4822 122 31644	KEFQ 1206 2200PF 10%
CC 5026	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5112	5322 122 31647	KEFQ 1206 1000PF 20%
CC 5113	4822 126 12607	KEFQ 1206 470PF 10%

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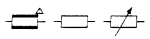
CC 5116	4822 126 12607	KEFQ 1206 470PF 10%
CC 5121	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5122	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5123	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5127	4822 126 12526	KEFQ 0805 0.47PF
CC 5139	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5141	4822 122 32504	KEFQ 1206 15PF5%
CC 5142	4822 122 32504	KEFQ 1206 15PF5%
CC 5143	4822 122 32504	KEFQ 1206 15PF5%
CC 5146	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5161	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5162	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5166	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5168	4822 126 12608	KEFQ 1206 100PF 10%
CC 5171	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5172	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5173	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5176	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5183	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5191	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5192	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5193	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5231	4822 126 12607	KEFQ 1206 470PF 10%
CC 5232	4822 126 12607	KEFQ 1206 470PF 10%
CC 5237	4822 126 12607	KEFQ 1206 470PF 10%
CC 5238	4822 126 12607	KEFQ 1206 470PF 10%
CC 5241	4822 126 12607	KEFQ 1206 470PF 10%
CC 5242	4822 122 32082	KEFQ 1206 4.7PF
CC 5243	4822 126 12607	KEFQ 1206 470PF 10%
CC 5246	4822 126 12608	KEFQ 1206 100PF5%
CC 5247	4822 122 32082	KEFQ 1206 4.7PF
CC 5248	4822 122 32082	KEFQ 1206 4.7PF
CC 5266	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5271	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5281	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5282	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5298	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5311	4822 122 32479	KEFQ 1206 1PF
CC 5313	4822 126 12607	KEFQ 1206470PF 10%
CC 5316	5322 122 31647	KEFQ 1206 1000PF 20%
CC 5317	4822 122 31971	KEFQ 120610PF5%
CC 5318	4822 122 31971	KEFQ 120610PF5%
CC 5319	5322 122 31647	KEFQ 1206 1000PF 20%
CC 5321	4822 126 12607	KEFQ 1206 470PF 10%
CC 5322	4822 122 31797	KEFQ 1206 0.022UF20%
CC 5323	4822 122 31797	KEFQ 1206 0.022UF20%
CC 5326	5322 122 31647	KEFQ 12061000PF 20%
CC 5327	4822 122 31974	KEFQ 1206820PF 10%
CC 5328	4822 126 12609	KEFQ 1206270PF5%
CC 5331	5322 122 31647	KEFQ 12061000PF 20%
CC 5332	4822 126 12611	KEFQ 12060.1UF 20%
CC 5333	4822 126 12611	KEFQ 12060.1UF 20%
CC 5334	4822 126 12611	KEFQ 12060.1UF 20%
CC 5336	4822 126 12611	KEFQ 12060.1UF 20%
CC 5411	4822 126 12611	KEFQ 12060.1UF 20%
CC 5413	4822 126 12527	KEFQ 1206 12PF5%
CC 5419	4822 126 12611	KEFQ 12060.1UF 20%
CC 5423	4822 126 12611	KEFQ 12060.1UF 20%
CC 5426	4822 126 12611	KEFQ 12060.1UF 20%
CC 5431	4822 126 12611	KEFQ 12060.1UF 20%

CC 5433	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5437	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5461	4822 122 32542	KEFQ 1206 0.047UF20%
CC 5463	4822 122 31825	KEFQ 1206 27PF5%
CC 5466	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5471	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5473	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5477	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5482	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5485	4822 122 32442	KEFQ 1206 0.01 UF20%
CC 5486	4822 126 12611	KEFQ 1206 0.1UF 20%
CC 5488	4822 122 32542	KEFQ 1206 0.047UF20%
CC 5518	4822 122 32542	KEFQ 0805 0.047UF10%
CC 5521	4822 126 12605	KEFQ 0805 680PF5%
CC 5522	4822 122 31974	KEFQ 1206 820PF5%
CC 5523	4822 051 10223	R-CHIP 120622K 5%
CC 5526	4822 126 12608	KEFQ 1206 100PF 10%
CC 5531	4822 126 12605	KEFQ 0805 680PF5%
CC 5532	4822 122 31974	KEFQ 1206 820PF5%
CC 5533	4822 126 12604	KEFQ 0805 120PF5%
CC 5536	4822 126 12608	KEFQ 1206 100PF 10%
CC 5563	4822 122 31797	KEFQ 1206 0.022UF20%
CC 5582	4822 122 32542	KEFQ 1206 0.047UF20%

CR 0001	4822 051 10008	R-CHIP 1206 JUMPER
CR 0003	4822 051 10008	R-CHIP 1206 JUMPER
CR 0004	4822 051 10008	R-CHIP 1206 JUMPER
CR 0005	4822 051 10008	R-CHIP 1206 JUMPER
CR 0006	4822 051 10008	R-CHIP 1206 JUMPER
CR 0007	4822 051 10008	R-CHIP 1206 JUMPER
CR 0008	4822 051 10008	R-CHIP 1206 JUMPER
CR 0009	4822 051 10008	R-CHIP 1206 JUMPER
CR 0011	4822 051 10008	R-CHIP 1206 JUMPER
CR 0012	4822 051 10008	R-CHIP 1206 JUMPER
CR 0013	4822 051 10008	R-CHIP 1206 JUMPER
CR 0014	4822 051 10008	R-CHIP 1206 JUMPER
CR 0015	4822 051 10008	R-CHIP 1206 JUMPER
CR 0016	4822 051 10008	R-CHIP 1206 JUMPER
CR 0017	4822 051 10008	R-CHIP 1206 JUMPER
CR 0018	4822 051 10008	R-CHIP 1206 JUMPER
CR 0019	4822 051 20008	R-CHIP 0805 JUMPER
CR 0021	4822 051 10008	R-CHIP 1206 JUMPER
CR 0023	4822 051 10008	R-CHIP 1206 JUMPER
CR 0024	4822 051 10008	R-CHIP 1206 JUMPER
CR 0025	4822 051 10008	R-CHIP 1206 JUMPER
CR 0026	4822 051 10008	R-CHIP 1206 JUMPER
CR 0028	4822 051 10008	R-CHIP 1206 JUMPER
CR 0029	4822 051 10008	R-CHIP 1206 JUMPER
CR 0030	4822 051 10008	R-CHIP 1206 JUMPER
CR 0031	4822 051 10008	R-CHIP 1206 JUMPER
CR 0034	4822 051 10008	R-CHIP 1206 JUMPER
CR 0036	4822 051 10008	R-CHIP 1206 JUMPER
CR 0037	4822 051 10008	R-CHIP 1206 JUMPER
CR 0038	4822 051 10008	R-CHIP 1206 JUMPER

LIST OF ELECTRICAL PARTS



CR 0039	4822 051 10008	R-CHIP 1206 JUMPER
CR 0041	4822 051 10008	R-CHIP 1206 JUMPER
CR 0042	4822 051 10008	R-CHIP 1206 JUMPER
CR 0044	4822 051 20008	R-CHIP 0805 JUMPER
CR 0045	4822 051 10008	R-CHIP 1206 JUMPER
CR 0046	4822 051 10008	R-CHIP 1206 JUMPER
CR 0047	4822 051 10008	R-CHIP 1206 JUMPER
CR 0049	4822 051 10008	R-CHIP 1206 JUMPER
CR 0051	4822 051 10223	R-CHIP 1206 22 K 5%
CR 0053	4822 051 10008	R-CHIP 1206 JUMPER
CR 0054	4822 051 10008	R-CHIP 1206 JUMPER
CR 0056	4822 051 10008	R-CHIP 1206 JUMPER
CR 0057	4822 051 10008	R-CHIP 1206 JUMPER
CR 0058	4822 051 10008	R-CHIP 1206 JUMPER
CR 0059	4822 051 10008	R-CHIP 1206 JUMPER
CR 0060	4822 051 10008	R-CHIP 1206 JUMPER
CR 0061	4822 051 10008	R-CHIP 1206 JUMPER
CR 0062	4822 051 10008	R-CHIP 1206 JUMPER
CR 0063	4822 051 10008	R-CHIP 1206 JUMPER
CR 0064	4822 051 20008	R-CHIP 0805 JUMPER
CR 0065	4822 051 20008	R-CHIP 0805 JUMPER
CR 0066	4822 051 10008	R-CHIP 1206 JUMPER
CR 0067	4822 051 10008	R-CHIP 1206 JUMPER
CR 0101	4822 111 41309	R-CHIP 1206 47 K 5%
CR 0102	4822 111 41309	R-CHIP 1206 47 K 5%
CR 0103	4822 111 41309	R-CHIP 1206 47 K 5%
CR 0106	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0112	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0113	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0114	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0116	4822 051 10821	R-CHIP 1206 820 E 5%
CR 0118	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0119	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0121	4822 051 10682	R-CHIP 1206 6.8 K 5%
CR 0126	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0127	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0128	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0133	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0135	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0136	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0141	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0142	4822 051 20472	R-CHIP 0805 4.7 K 5%
CR 0143	4822 051 20472	R-CHIP 0805 4.7 K 5%
CR 0146	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0301	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0302	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0303	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0304	4822 051 10102	R-CHIP 1206 1 K 5%
CR 0311	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0316	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0317	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0322	4822 051 10103	R-CHIP 1206 10 K 5%
CR 0323	4822 051 10333	R-CHIP 1206 33 K 5%
CR 0324	4822 051 10272	R-CHIP 1206 2.7 K 5%
CR 0326	4822 051 10123	R-CHIP 1206 12 K 5%
CR 0327	4822 051 10682	R-CHIP 1206 6.8 K 5%
CR 0328	4822 051 10471	R-CHIP 1206 470 E 5%
CR 0329	4822 051 10101	R-CHIP 1206 100 E 5%
CR 0411	4822 051 10562	R-CHIP 1206 5.6 K 5%
CR 0412	4822 051 10242	R-CHIP 1206 2.4 K 5%
CR 0413	4822 051 20562	R-CHIP 0805 5.6 K 5%
CR 0416	4822 051 20562	R-CHIP 0805 5.6 K 5%
CR 0417	4822 051 20242	R-CHIP 0805 2.4 K 5%
CR 0418	4822 051 10562	R-CHIP 1206 5.6 K 5%
CR 0421	4822 051 10562	R-CHIP 1206 5.6 K 5%
CR 0422	4822 051 10562	R-CHIP 1206 5.6 K 5%
CR 0423	4822 051 10242	R-CHIP 1206 2.4 K 5%
CR 0426	4822 051 10242	R-CHIP 1206 2.4 K 5%
CR 0427	4822 051 10562	R-CHIP 1206 5.6 K 5%
CR 0428	4822 051 20562	R-CHIP 0805 5.6 K 5%
CR 0429	4822 051 10008	R-CHIP 1206 JUMPER
CR 0430	4822 051 10008	R-CHIP 1206 JUMPER
CR 0431	4822 051 10474	R-CHIP 1206 470 K 5%
CR 0432	4822 051 10474	R-CHIP 1206 470 K 5%
CR 0433	4822 051 10008	R-CHIP 1206 JUMPER
CR 0434	4822 051 10008	R-CHIP 1206 JUMPER
CR 0435	4822 051 10008	R-CHIP 1206 JUMPER
CR 0436	4822 051 10008	R-CHIP 1206 JUMPER
CR 0441	4822 051 10511	R-CHIP 1206 510 E 2%
CR 0442	4822 051 10241	R-CHIP 1206 240 E 2%
CR 0443	4822 051 10121	R-CHIP 1206 120 E 2%
CR 0445	4822 051 20131	R-CHIP 0805 130 E 2%
CR 0446	4822 051 10511	R-CHIP 1206 510E 2%
CR 0447	4822 051 10241	R-CHIP 1206 240E 2%
CR 0448	4822 051 10121	R-CHIP 1206 120 E 2%
CR 0449	4822 051 20131	R-CHIP 0805 130E 2%
CR 0461	4822 051 10474	R-CHIP 1206 470 K 5%
CR 0462	4822 051 10474	R-CHIP 1206 470 K 5%
CR 0463	4822 051 10752	R-CHIP 1206 7.5 K 2%
CR 0464	4822 051 10008	R-CHIP 1206 JUMPER
CR 0465	4822 051 10008	R-CHIP 1206 JUMPER
CR 0469	4822 051 10752	R-CHIP 1206 7.5 K 2%
CR 0471	4822 051 20153	R-CHIP 0805 15 K 2%
CR 0472	4822 051 10334	R-CHIP 1206 330 K 5%
CR 0473	4822 051 10271	R-CHIP 1206 270 E 5%
CR 0476	4822 051 20271	R-CHIP 0805 270 E 5%
CR 0477	4822 051 10104	R-CHIP 1206 100 K 5%
CR 0478	4822 051 20122	R-CHIP 0805 1.2 K 5%
CR 0479	4822 051 10122	R-CHIP 1206 1.2 K 5%
CR 0480	4822 051 10222	R-CHIP 1206 2.2 K 5%
CR 0481	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 0482	4822 051 10104	R-CHIP 1206 100 K 5%
CR 0483	4822 111 41309	R-CHIP 1206 47 K 5%
CR 0486	4822 051 10334	R-CHIP 1206 330 K 5%
CR 0487	4822 051 10271	R-CHIP 1206 270 E 5%
CR 0488	4822 051 20271	R-CHIP 0805 270 E 5%
CR 0489	4822 051 10104	R-CHIP 1206 100 K 5%
CR 0491	4822 051 10122	R-CHIP 1206 1.2 K 5%
CR 0492	4822 051 20122	R-CHIP 0805 1.2 K 5%
CR 0501	4822 051 10479	R-CHIP 1206 47 E 5%
CR 0503	4822 111 41309	R-CHIP 1206 47 K 5%
CR 1016	4822 051 10008	R-CHIP 1206 JUMPER
CR 5113	4822 051 10331	R-CHIP 1206 330E 5%
CR 5117	4822 051 10101	R-CHIP 1206 100E 5%
CR 5118	4822 051 10101	R-CHIP 1206 100E 5%
CR 5121	4822 051 10689	R-CHIP 1206 68E 5%
CR 5122	4822 051 10689	R-CHIP 1206 68E 5%
CR 5126	4822 051 10101	R-CHIP 1206 100E 5%
CR 5127	4822 051 10101	R-CHIP 1206 100E 5%
CR 5131	4822 051 10273	R-CHIP 1206 27 K 5%

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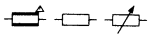
CR 5132	4822 051 10272	R-CHIP 1206 2.7 K 5%
CR 5133	4822 051 10008	R-CHIP 1206 JUMPER
CR 5136	4822 051 10008	R-CHIP 1206 JUMPER
CR 5137	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5139	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5141	4822 051 10829	R-CHIP 1206 82E 5%
CR 5142	4822 051 10272	R-CHIP 1206 2.7 K 5%
CR 5146	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5148	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5149	4822 051 10273	R-CHIP 1206 27 K 5%
CR 5161	4822 051 10273	R-CHIP 1206 27 K 5%
CR 5162	4822 051 10123	R-CHIP 1206 12 K 5%
CR 5163	4822 051 10222	R-CHIP 1206 2.2 K 5%
CR 5164	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5166	4822 051 10008	R-CHIP 1206 JUMPER
CR 5167	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5171	4822 051 10471	R-CHIP 1206 470E 5%
CR 5172	4822 051 10008	R-CHIP 1206 JUMPER
CR 5173	4822 051 10821	R-CHIP 1206 820E 5%
CR 5176	4822 051 10821	R-CHIP 1206 820E 5%
CR 5177	4822 051 10472	R-CHIP 1206 4.7K 5%
CR 5178	4822 051 10472	R-CHIP 1206 4.7K 5%
CR 5181	4822 051 10391	R-CHIP 1206 390E 5%
CR 5182	4822 051 10181	R-CHIP 1206 180E 5%
CR 5183	4822 051 10181	R-CHIP 1206 180E 5%
CR 5186	4822 051 10229	R-CHIP 1206 22E 5%
CR 5187	4822 051 10008	R-CHIP 1206 JUMPER
CR 5188	4822 051 10229	R-CHIP 1206 22E 5%
CR 5189	4822 051 10008	R-CHIP 1206 JUMPER
CR 5191	4822 051 10008	R-CHIP 1206 JUMPER
CR 5193	4822 051 10008	R-CHIP 1206 JUMPER
CR 5194	4822 051 10561	R-CHIP 1206 560E 5%
CR 5196	4822 051 10008	R-CHIP 1206 JUMPER
CR 5212	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 5213	4822 051 10008	R-CHIP 1206 JUMPER
CR 5232	4822 051 10681	R-CHIP 1206 680 E 5%
CR 5236	4822 051 10101	R-CHIP 1206 100 E 5%
CR 5237	4822 051 10399	R-CHIP 1206 39 E 5%
CR 5238	4822 051 10272	R-CHIP 1206 2.7 K 5%
CR 5239	4822 051 10272	R-CHIP 1206 2.7 K 5%
CR 5241	4822 051 10229	R-CHIP 1206 22 E 5%
CR 5242	4822 051 10151	R-CHIP 1206 150 E 5%
CR 5246	4822 051 10154	R-CHIP 1206 150 K 5%
CR 5261	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 5262	4822 051 10222	R-CHIP 1206 2.2 K 5%
CR 5263	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5266	4822 051 10008	R-CHIP 1206 JUMPER
CR 5267	4822 051 10479	R-CHIP 1206 47E 5%
CR 5268	4822 051 10181	R-CHIP 1206 180E 5%
CR 5269	4822 051 10181	R-CHIP 1206 180E 5%
CR 5272	4822 051 10008	R-CHIP 1206 JUMPER
CR 5273	4822 051 10008	R-CHIP 1206 JUMPER
CR 5281	4822 051 10471	R-CHIP 1206 470E 5%
CR 5283	4822 051 10008	R-CHIP 1206 JUMPER
CR 5286	4822 051 10008	R-CHIP 1206 JUMPER
CR 5287	4822 051 10821	R-CHIP 1206 820 E 5%
CR 5289	4822 051 10008	R-CHIP 1206 JUMPER
CR 5291	4822 051 10008	R-CHIP 1206 JUMPER
CR 5292	4822 051 10821	R-CHIP 1206 820 E 5%
CR 5293	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 5294	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 5295	4822 051 10229	R-CHIP 1206 22E 5%
CR 5296	4822 051 10181	R-CHIP 1206 180E 5%
CR 5297	4822 051 10181	R-CHIP 1206 180E 5%
CR 5298	4822 051 10008	R-CHIP 1206 JUMPER
CR 5299	4822 051 10229	R-CHIP 1206 22 E 5%
CR 5317	4822 051 10008	R-CHIP 1206 JUMPER
CR 5319	4822 051 10008	R-CHIP 1206 JUMPER
CR 5321	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5328	4822 051 20681	R-CHIP 0805 680 E 5%
CR 5331	4822 051 10513	R-CHIP 1206 51 K 5%
CR 5333	4822 051 10563	R-CHIP 1206 56 K 5%
CR 5336	4822 051 10154	R-CHIP 1206 150 K 5%
CR 5337	4822 051 10154	R-CHIP 1206 150 K5%
CR 5411	4822 051 10271	R-CHIP 1206 270 E5%
CR 5412	4822 051 10222	R-CHIP 1206 2.2 K5%
CR 5413	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5414	4822 051 10152	R-CHIP 1206 1.5 K5%
CR 5416	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5417	4822 051 10101	R-CHIP 1206 100E 5%
CR 5418	4822 051 10331	R-CHIP 1206 330E 5%
CR 5419	4822 051 10008	R-CHIP 1206 JUMPER
CR 5420	4822 051 10228	R-CHIP 1206 2.2E 5%
CR 5421	4822 051 10271	R-CHIP 1206 270E 5%
CR 5422	4822 051 10104	R-CHIP 1206 100 K5%
CR 5423	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5427	4822 051 10008	R-CHIP 1206 JUMPER
CR 5432	4822 051 10222	R-CHIP 1206 2.2K 5%
CR 5433	4822 051 10228	R-CHIP 1206 2.2E 5%
CR 5461	4822 051 10273	R-CHIP 1206 27 K 5%
CR 5462	4822 051 10472	R-CHIP 1206 4.7 K5%
CR 5463	4822 051 10102	R-CHIP 1206 1 K 5%
CR 5465	4822 051 10472	R-CHIP 1206 4.7 K 5%
CR 5466	4822 051 10228	R-CHIP 1206 2.2E 5%
CR 5471	4822 051 20008	R-CHIP 0805 JUMPER
CR 5472	4822 051 10478	R-CHIP 1206 4.7E 5%
CR 5473	4822 051 10478	R-CHIP 1206 4.7E 5%
CR 5482	4822 051 10478	R-CHIP 1206 4.7E 5%
CR 5483	4822 051 10478	R-CHIP 1206 4.7E 5%
CR 5487	4822 051 10008	R-CHIP 1206 JUMPER
CR 5512	4822 051 10393	R-CHIP 1206 39 K 5%
CR 5513	4822 051 10478	R-CHIP 1206 4.7E 5%
CR 5516	4822 051 10008	R-CHIP 1206 JUMPER
CR 5517	4822 051 10103	R-CHIP 1206 10 K 5%
CR 5521	4822 051 20223	R-CHIP 0805 22 K 2%
CR 5522	4822 051 10223	R-CHIP 1206 22 K 5%
CR 5526	4822 051 10113	R-CHIP 1206 11 K 5%
CR 5531	4822 051 20223	R-CHIP 0805 22 K 2%
CR 5532	4822 051 20223	R-CHIP 0805 22 K 5%
CR 5533	4822 051 10223	R-CHIP 1206 22 K 5%
CR 5536	4822 051 10113	R-CHIP 1206 11 K 5%
CR 5563	4822 051 10681	R-CHIP 1206 680E 5%
CR 5564	4822 051 10271	R-CHIP 1206 270E 5%

LIST OF ELECTRICAL PARTS



R 0069	4822 100 20694	ESTR.SK10-A 100 K LI
R 0119	4822 100 20694	ESTR.SK10-A 100 K LI
R 0123	4822 100 20694	ESTR.SK10-A 100 K LI
R 5138	5322 101 10627	ESTR.SK10-A10 K LIN
R 5147	5322 101 10627	ESTR.SK10-A10 K LIN
R 5168	4822 100 11986	ESTR.SK10-A 1 K LIN
R 5338	4822 100 11988	ESTR.PPK10-A47 K10%
R 5464	4822 100 11987	ESTR.SK10-A 3.3 K LI
R 5560	4822 100 90112	KSW AX 0207-GA NB

MISCELLANEOUS

	4822 736 21633	INSTRUCT.FOR USE
	4822 218 10498	IR-TRANSMITTER
DP 0801	4822 130 91228	FL. DISPLAY
SI 0610	4822 253 50147	LOET-SI.-GR 315 MA/T
SI 0611	4822 253 50151	LOET-SI.-GR 1.25 A/T
SI 0612	4822 253 50149	LOET-SI.-GR 630 MA/T
SI 0615	4822 252 20237	THERMOFUSE115DEG
SI 0661	4822 253 50148	LOET-SI.-GR 500 MA/T
SI 0671	4822 253 50149	LOET-SI.-GR 630 MA/T